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VOL.80

NO.9

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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JOHN SHAW BILLINGS

Hoosier-born Physician-Surgeon, Soldier, Librarian and Scholar

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The Changing Face of Control Control

1987 Annual Meeting

> Indiana State Medical Association

November 5-8, 1987 Thursday - Sunday

Radisson Plaza Hotel Keystone at the Crossing Indianapolis

Plan Now to Attend:

- House of Delegates Sessions
- Reference Committees
- Medical Section Meetings
- IMPAC Luncheon and Meeting
- 50-Year Club Luncheon
- General Scientific Meeting on Socio-economic Issues
- President's Dinner and Dance Al Cobine and his Orchestra

Come Help us Examine: The Changing Face of Medicine

Vol. 80, No. 9 SEPTEMBER 1987

> Devoted to the interests of the land a posfession and public health in limitarii sincl

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ABOUT THE COVER

This reproduction of an oil portrait of John Shaw Billings was painted by Cecilia Beaux in 1895, thirty years after Dr. Billings became director of what is now the National Library of Medicine, Bethesda, Md. See Medical Museum Notes for an explanation of what the John Shaw Billings History of Medicine Society is attempting to accomplish. — PHOTO COURTESY OF THE NATIONAL LIBRARY OF MEDICINE

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MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis

JOHN SHAW BILLINGS, M.D. was featured once before on the cover of JISMA (June 1981) but not with four color reproduction. Billings was born in Indiana in 1838. Among other accomplishments, he was the founder and first director of the Surgeon General's Library—now designated as the National Library of Medicine (in cidentally, the source of the cover il lustration). At the time of his death in 1913, Dr. Billings was serving as the first director of the New York Public Library.

Dr. Billings is the appropriate backdrop for this page of Notes, which is the presentation of a memo to physicians from Jans Muller, M.D., secretary treasurer of the I.U. School of Medicine's John Shaw Billings History of Medicine Society:

The Indiana University School of Medicine, specifically its Library, is in terested in enlarging its rare and valuable book collections in medicine and related fields. The related fields are not necessarily limited to public health, nursing and the history of science generally. It should be worth considering to bequeath books of value to the School of Medicine Library, or at least to allow the Library to go through your personal library after your death and select all those items which might be of value to the central collection. There are tax advantages to this but first let us consider what books might be of value, and how such value can be established.

There is a hardcore nucleus of per sons at the Indiana University School of Medicine seriously interested in the history of medicine; they band together in the John Shaw Billings History of Medicine Society, Inc., a not-for-profit organization, registered by the secretary of state of Indiana and by the Internal Revenue Service.

The organization is small and its activities can be described as embryonal if the point of view is one of hope; vestigial if the point of view is one of despair. Whatever, an idea of the value





John Shaw Billings, M.D. (1838-1913)

I.U. School of Medicine Revives John Shaw Billings History of Medicine Society

of older medical books can be obtain ed by having the collection assessed by members of the John Shaw Billings Society; such review and assessment is, of course, without any charge or obligation. What books might be of value?

- 1. Almost any book with a publication date prior to 1900 is probably of value.
- 2. Many classic works, particularly in the history of medicine but also some monographic treatments in the field of clinical medicine published after 1900, are of value. The first edition of the monography by Jolly on the thyroid is a classic example; or both the first and the last edition of Ewing's book on tumors. In addition, almost any older monograph that is heavily illustrated in the fields of anatomy or surgical technique has some value.
- 3. On occasion, even relatively common works in medicine such as

subsequent editions of Conn's Current Therapy or the standard textbooks can be of use. The idea is to have a whole set of the various editions of particular popular texts so that the historian can trace when a particular therapy came into vogue, or when a particular concept of disease became popular. For example, the idea that a number of diseases characterized by inflammation of vessels and connective tissue could be considered diseases of collagen was first proposed by Klemperer in 1942. How long did it take before the term collagen disease was on everyone's lips and this particular form of summarizing our ignorance became popular? It is clear that, once the subject and a continuous set of a particular popular text has been obtained, further copies of such works are not needed.

4. The type of books being sought

CONTINUED ON PAGE 879

Powerful against susceptible pathogens.* Ican 8 Easy on tight budgets. Clean.

Gentle to patients (generally well tolerated)

The one antimicrobial that belongs on every formulary.

Once-a-day Rocephin Roche ceftriaxone sodium/Roche

* ROCEPHIN is indicated in the following infections: bacterial septicemia, bone and joint, intra-abdominal, lower respiratory tract, skin and skin structure, urinary tract, bacterial meningitis and gonorrhea. Please see summary of product information on adjacent page for indicated susceptible organisms.

Rocephin IV-IM ceftriaxone sodium/Roche

Before prescribing, please consult complete product information, a summary of which follows

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FUTURE FILE

Hand Surgery

Dr. Peter J. Stern of Cincinnati will be the featured speaker at the Indiana Center for Surgery and Rehabilitation of the Hand Monday Night Hand Conference.

Dr. Stern, clinical professor of orthopedic surgery at the University of Cincinnati College of Medicine, will present "Reconstruction of the Burned Upper Extremity" at 7 p.m., Sept. 21, at the Center.

The Monday Night Hand Conferences, held monthly, are presented as continuing education for hand fellows, orthopedic residents, hand therapists and others interested in surgery of the upper extremity.

For information on this and future conferences, call Beth Bush at (317) 875-9105.

Primary Care Update

A Primary Care Update, the 72nd Scientific Assembly of the Interstate Postgraduate Medical Association, will be held Nov. 2-5 at the Diplomat Resort in Hollywood, Fla.

The program will concentrate on six areas of medicine, with emphasis on the problems that the primary care physician meets in day-to-day practice.

Program and registration materials are available from the Association at P.O. Box 1109, Madison, Wisc. 53701.

"It's dealt with so many nervous

disorders-it's developed one!"

The Journal of the American Medicat Association publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Medical-Legal Issues

"Current Medical-Legal Issues in Indiana" will be the subject of the 5th annual SIMBA South seminar, to be held during spring break (March 28-April 1, 1988)

The seminar is offered by Seminars for Indiana Medico/Legal Bar Association (SIMBA), Indianapolis. Faculty will include well known Indiana physicians and attorneys. Tuition is \$350. CLE and CEU credits can be earned.

For more information, call (317) 871-6222 or write SIMBA South V, 8402 Harcourt Road, Suite 220, Indianapolis 46260.

Clinical Cytopathology

The Johns Hopkins University School of Medicine announces the 29th Annual Postgraduate Institute for Pathologists in Clinical Cytopathology. This is designed as a subspecialty residency in clinical cytopathology.

Study is compressed into 152 AMA Category 1 credit hours in two courses, both of which must be taken:

From February through April 1988, Home Study Course A is provided registrants for personal reading and microscopic study at their own laboratory in preparation for Course B; and

From April 25 to May 6, 1988, In-Residence Course B is an extremely concentrated lecture series with intensive laboratory studies and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore.

For details, write John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205.

Indiana University CME

Sept. 18: Indiana Neonatal Society meeting; Lincoln Hotel, Indianapolis.

Sept. 30: Diabetic Foot Infections: Lincoln Hotel, Indianapolis.

Oct. 7-8: 15th Annual Fall Symposium on Pediatric Trauma and Critical Care; Lincoln Hotel, Indianapolis.

Oct. 21: AIDS Symposium; Lincoln Hotel, Indianapolis.

Oct. 24-25: Advanced Trauma Life Support; Wishard Memorial Hospital, Indianapolis.

Nov. 7: Gynecologic Problems of the Young Female; Vigo County Public Library, Terre Haute.

Nov. 12-13: Garceau-Wray Lectures; Wishard Memorial Hospital, Indianapolis.

Nov. 13-14: American College of Physicians, Indiana Chapter scientific session; Hyatt Regency, Indianapolis.

Nov. 19: Vascular Disease: What the Primary Care Physician Needs to Know; Reid Memorial Hospital, Richmond.

For more information, call Melody Dian, CME, I.U. School of Medicine — (317) 274-8353.

Newborn Symposium

The 21st Annual Newborn Symposium will meet Oct. 15-16 in the Kosair Children's Hospital auditorium at 200 E. Chestnut St., Louisville.

Presentations will occupy a half-day each on neonatal infectious disease, neonatal hematology and general pediatric topics.

For more information, call (502) 562-8826.

Mammography Conference

A Mammography Conference will be part of the CME program of the University of Wisconsin School of Medicine Oct. 22-24 at the Inn on the Park in Madison, Wisc.

An unspecified number of Category 1 credit hours will be awarded. The correspondent is Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705 – (608) 263-2856.

Impairment

The AMA National Conference on the Impaired Health Professional will be held October 8 to 11 at the Drake Hotel, Chicago. The major theme will be: "Impaired Health Professionals: Educating Ourselves, Educating Others."

For further information contact Janice J. Robertson, AMA Department of Substance Abuse, 535 N. Dearborn St., Chicago 60610 – (312) 645-5083.

Microcomputer Seminar

A one-day, hands-on program for the physician beginning to use computers will be presented at the new IBM computer lab of the Lincoln Hotel and Conference Center in Indianapolis, Saturday, Oct. 24.

The four fundamentals of computer literacy—word processing, databases, spreadsheets and communications—will be discussed. Each participant will receive sample programs in these four areas to take home.

An advanced seminar for physicians who have used computers for one year or more will be planned if there is sufficient interest.

Contact: Marvin Miller, M.D., (317) 846-5688 after 5 p.m. The deadline for early, discounted registration is Sept. 24.

Kentucky CME Courses

The University of Kentucky announces these CME accredited Category 1 courses:

Oct. 16-17: Bone Marrow Transplant ation for Patients Without Matched Donors;

Oct. 25-30: 18th Family Medicine Review, Session III;

Dec. 16-17: Advanced Trauma Life Support;

Dec. 18-19: Trauma Update 1987;

Feb. 21-28: 19th Family Medicine Review, Session I.

Contact: Joy Greene, 132 College of Medicine Office Building, University of Kentucky, Lexington, Ky. 40536 – (606) 233-5161.

Evansville Seminars

Sept. 17: Joseph E. Coleman Pediatric Seminar on Advances in Pediatric Otolaryngology and Pulmonary Disease;

Oct. 15: The Endocrine Seminar on Pathophysiology of Diabetes Mellitus;

Nov. 5: Family Practice Seminar on the Treatment of Male and Female Psychosexual Dysfunction.

For more information contact CME, St. Mary's Medical Center, 3700 Washington Ave., Evansville, Ind. 47750-(812) 479-4468.

Community Hospitals CME

Oct. 9: Second Annual Sleep/Wake Disorders Seminar, Holiday Inn North, Indianapolis.

Nov. 13: First Annual Pain Seminar, Radisson Plaza Hotel, Indianapolis.

For more information, contact Carolyn Roeder, Medical Education, Community Hospitals Indianapolis—(317) 353-4269.

CONTINUED ON NEXT PAGE

Excellence at Humana Hospital – Audubon Announces...

Second Symposium on Sleep Disorder Medicine October 15, 1987/Hyatt Regency Louisville Louisville, Kentucky

The Sleep Disorders Center has designed this continuing medical education program for physicians and residents specializing in family and general practice, internal medicine, occupational medicine, psychiatry, psychology and other health professionals caring for the adult patient who has difficulty initiating and maintaining sleep.

David H. Winslow, M.D., and Carl P. Browman, Ph.D., will lead the program

featuring guest speakers Peter J. Hauri, Ph.D., Dartmouth Medical School, and Timothy A. Roehrs, Ph.D., Wayne State University.

Current concepts to be addressed are the evaluation of sleep disorders including patient appropriateness for polysomnographic testing and long term care of the patient with insomnia.

For registration information, please call or write Janice McMahan, Neuroscience Center of Excellence, Humana Hospital – Audubon, One Audubon Plaza Drive, Louisville, Kentucky 40217.
Telephone (502) 636-7087.



Bringing the human being in need into the hands of a doctorSM

St. Vincent Hospital CME

St. Vincent Hospital and Health Care Center, Indianapolis announces the following CME programs:

Sept. 19-20: Ultrasound Registry Review; Cooling Auditorium, St. Vincent Hospital.

Sept. 24-25: Hands-on Gynecologic Laser Course; St. Vincent Hospital.

Oct. 7: 12th Annual Arthur B. Richter Lectureship in Clinical Cardiology; Thomas N. James, M.D., guest lecturer; Sheraton Marten House.

Oct. 21-23: Intervention in Cardiovascular Disease; David Cumberland, M.D. and Eric Topol, M.D., guest lecturers; Cooling Auditorium, St. Vincent Hospital.

Dec. 2: Sixth Annual Symposium on Ethical and Moral Issues in Medicine; co-sponsored by Methodist Hospital of Indiana; Ritz Charles Conference Center.

For more information, call Marilyn Soltermann, CME coordinator—(317) 871-3460.

Methodist Hospital CME

Sept. 16-18: Research Design and Medical Biostatistics for the Clinician (co-sponsor: American College of Physicians), Hilton-on-the-Circle, Indianapolis.

Sept. 18-19 and Nov. 13-14: Advanced Trauma Life Support, Methodist Hospital.

Oct. 9-10: Advanced Cardiac Life Support, Methodist Hospital.

Oct. 9-10: Central Neuropsychiatric Association meeting, Holiday Inn, Union Station, Indianapolis.

Oct. 9-11: 3rd Annual Perinatology Symposium, Four Winds-Lake Monroe, Bloomington.

Oct. 15-16: 8th Annual Harold C. Oschner, M.D., Radiology Lectureship ("Thoracic Imaging"), Lawrence Good, M.D., at Methodist Hospital.

Oct. 23-24: Emergency Medicine Update 1987, Methodist Hospital.

Oct. 28: 6th Annual Pediatric Critical Care Symposium, Methodist Hospital.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana — (317) 929-3733.



BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous administration of CARAFATE with tetracycline, phenytoin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The bioavailability of these agents may be restored simply by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug related tumorigenicity was found in chronic oral toxicity studies of 24 months' duration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertiges.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate

While healing with sucralifate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination

HOW SUPPLIED

CARAFATE (sucraffate) 1-gm pink tablets are supplied in bottles of 100 and in Unit Dose Identification Paks of 100. The tablets are embossed with MARION/1712 Issued 3/84

References:

- 1 Korman MG, Shaw RG, Hansky J, et al. *Gastroenterology* 80 1451-1453, 1981
- 2 Korman MG, Hansky J, Merrett AC, et al. Dig Dis Sci 27 712-715, 1982.
- 3 Brandstaetter G, Kratochvil P. Am J Med 79(suppl 2C).36-38, 1985.
- 4 Marks IN, Wright JP, Gilinsky NH, et al. J Clin Gastroenterol 8:419-423, 1986
- 5 Lam SK, Hui WM, Lau WY, et al: Gastroenterology 92 1193-1201, 1987.



Ulcer therapy that won't yield, even to smoking



What do you do for duodenal ulcer patients who should stop smoking, but won't? Both cimetidine¹ and ranitidine² have been shown less effective in smokers than nonsmokers.

Choose CARAFATE® (sucralfate/Marion). Two recent studies show Carafate to be as effective in smokers as nonsmokers.^{3,4} A difference further illustrated in a 283-patient study comparing sucralfate to cimetidine⁵:

Ulcer healing rates:

(at four weeks of therapy)5

Sucralfate:

Sucrai	iate.
All patients	79.4%
Smokers	81.6%
Cimeti	dine:
All patients	76.3%
- Anna Anna Anna Anna Anna Anna Anna Ann	AND THE RESERVE OF THE PARTY OF

62.5%

*Significantly greater than cimetidine smoker group ($P \le .05$).

Smokers

Carafate has a unique, nonsystemic mode of action that enhances the body's own ulcer healing ability and protects the damaged mucosa from further injury.

When your ulcer patient is a smoker, prescribe the ulcer medication that won't go up in smoke: safe, nonsystemic Carafate.

Nothing works like



Please see adjoining page for references and brief summary of prescribing information.

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There's never been a better time for her



nd PREMARIN®



Proven benefits beyond relief of vasomotor symptoms

No other estrogen proven effective for osteoporosis

Only conjugated estrogens tablets have established efficacy in both osteoporosis¹ and vasomotor symptoms* at 0.625 mg/day. No other estrogen, oral or transdermal, has established clinical evidence or minimum effective dose in both indications.

No estrogen proven safer

PREMARIN is the most extensively tested estrogen, with an unsurpassed record of long-term safety.

And clinical evidence shows a significantly reduced risk of endometrial hyperplasia when cycled with a progestin.²

PREMARIN* (conjugated estrogens tablets)

Most trusted for more reasons

*PREMARIN is indicated for moverate-to-severe vasomotor symptoms

Please see following page for brief summary of prescribing information.

For moderate-to-severe vasomotor symptoms and for osteoporosis

PREMARIN[®] (conjugated estrogens tablets)











0.9 mg

1.25 mg $2.5 \, \mathrm{mg}$

The appearance of these tablets is a trademark of Ayerst Laboratories

BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE

PREMARIN[®] Brand of conjugated estrogens tablets, USP PREMARIN® Brand of conjugated estrogens Vaginal Cream, in a nonliquefying base

REMARIN® Brand of conjugated estrogens Vaginal Cream, in a nonliquetying base

1. ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA
Three independent, case-controlled studies have reported an increased risk of endometrial cancer in
postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent
of the other known risk factors for endometrial cancer. These studies are further supported by the finding
that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the
United States with population-based cancer reporting systems, an increase which may be related to the
risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The
risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, whe
estrogens are used for the treatment of menopausal symptoms, the lowest dose that will confrol symptoms
should be utilized and medication should be discontinued as soon as possible. When prolonged treatment
is medically indicated, the patient should be reassessed on at least a semi-annual basis to determine the
need for continued therapy. Although the evidence must be considered preliminary, one study suggests that
therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking
estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding,
that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equi-estrogenic doses.

2. ESTROGENS SHOULD NOT BE USEO OURING PREGNANCY.
The use of lemale sex hormones, both estrogens and progestogens, during early prepancy may servously.

that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equi-estrogenic doses 2 ESTROGENS SHOULD NOT BE USEO OURING PREGNANCY. The use of lemale sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that lemales exposed in uter to diethylstibestrol, a nonsteroidal estrogen, have an increased risk of developing, in later life, a form of vaginal or cervical cancer that is ordinarily extremely tare. This risk has been estimated as not greater than 4 per 1,000 exposures Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although timese changes are histologically beingn, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannol be presumed they would not induce similar changes. Several exports suggest an association between intrauterine exposure to temale sex hormones and congenital anomalies, including congenital heart defects and limb-reduction defects. One case-controlled sludy estimated a 47-lold increased risk of limb-reduction defects in infants exposed in utero to sex hormones (oral confliceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a tew days of treatment. The data suggest that the risk of limb-reduction defects in exposed letuses is somewhat less than 1 per 1,000 in the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while laking this drug, she should be apprised of the potential risks to the felus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares urine. It contains estrone, equilin, and 17α -dihydroequilin, together with smaller amounts of 17α -estradiol equilenin, and 17α -dihydroequilenin, and an archivergen and archivergen archivergen and archivergen archivergen and archivergen mg, 125 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated

estrogens per gram

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP) Moderate-to-severe vasomotor
symptoms associated with the menopause (There is no evidence that estrogens are effective for nervous
symptoms or depression without associated vasomotor symptoms and they should not be used to treat such
conditions) Osteoporosis (abnormally low bone mass) Atrophic vaginitis Kraurosis vulvae Female castration
PREMARIN (conjugated estrogens) Vaginat Cream is indicated in the treatment of atrophic vaginitis and

kraurosis vulvae
PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE OURING PREGNANCY AND ITS
USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING)
Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometriam and to eliminate any hyperplastic changes. Whether films will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important, product labeling should be reviewed to minimize possible adverse effectods.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions. I known or suspected cancer of the breast except in appropriately selected patients being retailed for metastatic.

dosage may be important, product labeling should be reviewed to minimize possible adverse effects CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastants (assase 2. Known or suspected estrogen-dependent neoplasia 3. Known or suspected pregnancy (see Boxed Warning). 4. Undiagnosed abnormat genital bleeding. 5. Active thrombophlebits or thromboembolic disorders 6. A past history of thrombophlebits, thromboemsois, or Inhomboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Estrogens have been reported to increase the risk of endometrial carcinoma (see Boxed Warning) Mowever, a resent large, case-controlled study indicated no increase in risk of breast cancer in postmenopausal extra women. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estogens. Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement, it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebits, pulmonary embolism, stroke, and contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in oral contraceptive users of right intrombosis, mesenteric thromboembolic complications has also been reported in oral contraceptive users of right intrombosis, estrogens soluti

For atrophic vaginitis

PREMARIN (conjugated estrogens)

Vaginal Cream

 $0.625 \,\mathrm{mg/g}$



Benign hepatic adenomas should be considered in estrogen users having abdominal pain and fenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogencontaining oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause and blood pressure should be monitored with estrogen use. A worsening of glucose folerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcema in patients with breast cancer and bone metastases. PRECAUTIONS. Physical examination and a complete medical and family history should be taken examination and a complete medical and family history should be taken and a complete medical and family history should be taken and a complete medical and family history should be reported to right in the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs, and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention, such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the right and increase develop and internal hyperplasia in some patients with a history of depression should be carefully observed. Pre-existing uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. It jaundice develops in any patient receiving estrogen, the medication should be discontinued while the cause is investigated. Estrogens should be used wi

The following changes may be expected with larger doses of estrogen
a Increased sullobromophthalein retention
b Increased profitrombin and factors VII, VIII, IX, and X, decreased antithrombin 3, increased norepinephrine-

or incleased principlinal nations vii, viii, X, and X, decleased allithinition 3, increased interpineprinter-induced platelet aggregability of increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T₂ by column, or T₂ by radioimmunoassay Free T₃ resin uptake is decreased, reflecting the elevated TBG, tree T₄ concentration is unaltered of impaired glucose tolerance e. Decreased pregnanedol excelsion.

Reduced response to metyrapone test
 Reduced response to metyrapone test
 Reduced response to metyrapone test
 Reduced serum folate concentration
 Increased serum frighyceride and phospholipid concentration
 As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk
 Long term, continuous administration of natural and synthetic estrogens in certain animal species increases
 the troping of accuracy and the breast conservation and files. Hereage has been before exceptibled.

Long lefm, continuous administration or natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver However, in a recent, large case-controlled study of postmenopausal women there was no increase in risk of breast cancer with use of conjugated estrogens AOVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives breakthough bleeding, spotting, change in menstrual flow, dysmenorrhea, premenstrual-like syndrome, amenorrhea during and alter freatment, increase in size of uterine fibromyomata, vaginal candidiasis, change in cervical erosion and in degree of cervical secretion, cystitis-like syndrome, fenderness, enlargement, secretion (a) the sests in august, vomition, addigmant, camps, blading, cholestate, augustee, chilosome, or change in cervical erosion and in degree of cervical secretion, cystitis-like syndrome, lenderness, enlargement, secretion (of breasts), hausea, vomiting, abdominal cramps, bloating, cholestatic jaundice, chiloasma in melasma which may persist when drug is discontinued, eritherma untiliforme, eritylema nodosum, hemorrhagic eruption, loss of scalp hair, hirsuitism, steepening of corneal curvature, intolerance to contact lenses, headache, migraine, dizzness, mental depression, chorea, increase or decrease in weight, reduced carbohydrate folerance, aggravation of poriphyria, edema, changes in librio.

ACUTE OYENDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DDSAGE AND ADMINISTRATION:

PREMARIN's Brand of conjugated estrogens tablets, USP

1. Given cyclically for short-ferm use only. For treatment of moderale-to-severe vasomofor symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 mg to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg. three weeks on and one week off). Attempts to discontinue or taper medication should be made at three—to six-month intervals.

2. Given cyclically. Osteoporosis Female castration Osteoporosis. —0.625 mg daily Administration should be.

2 Given cyclically Osteoporosis Female castration Osteoporosis —0 625 mg daily Administration should be cyclic (eg. three weeks on and one week off) Female castration—1 25 mg daily, cyclically Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding
PREMARIN* Brand of conjugated estrogens Vaginal Cream
Given cyclically for short-ferm use only For treatment of atrophic vaginitis or kraurosis vulvae
The lowest dose that will control symptoms should be chosen and medication should be discontinued as

promptly as possible

Administration should be cyclic (eg. three weeks on and one week off)

Altempts to discontinue or taper medication should be made at three- to six-month intervals

Usual dosage range 2 g to 4 g daily, intravaginally, depending on the severity of the condition

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and
appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding

abnormal vaginal piecening References:

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Magnetic Resonance in the Evaluation of Multiple Sclerosis

MARTIN R. FARLOW, M.D.¹ JAMES C. STEVENS, M.D.¹ MARY K. EDWARDS, M.D.² ULTIPLE SCLEROSIS (MS) is a variably progressive disease of elusive pathogenesis that affects the central nervous system (CNS) white matter. It is the most common disabling neurologic disease of young adults. Traditionally, diagnosis of the disease and its extent have been determined by a careful history and detailed neurologic exam.

Ancillary laboratory procedures such as evoked potentials (EP), cerebrospinal fluid (CSF) analysis, and computed tomography (CT), have been helpful in providing additional information that can be used in making the diagnosis of MS.³ Nevertheless, some cases are erroneously diagnosed or remain undetected.⁴ In affected patients, necropsy studies usually reveal lesions to be more numerous than were suspected or detected clinically.⁵

A major advance in the field of

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neuroimaging has been provided recently with the development of magnetic resonance imaging (MRI). MRI is the technique that provides tomographic sections of the brain's hydrogen nuclei reflecting their density and velocity in their relaxation times (T1 and T2). T1 images provide fine anatomic detail of the brain and brainstem while T2 images tend to be more sensitive in the detection of

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pathologic tissue abnormalities.

Until the late 1970s, no techniques existed to image MS plaques in live patients and the only way their presence could be directly confirmed was by brain biopsy or autopsy. In acute MS plaques there is frequently disruption of blood/brain barrier, a fact which first allowed them to be imaged via CT with contrast enhancement. However, even with advanced CT scanners and double dose contrast, only small numbers of plaques could be seen in a minority of patients suspected of having MS. Since the advent of MRI scanning in 1980, it has been evident that MRI is far more sensitive in the detection of MS plaques than CT. On T2 weighted sequences, MRI frequently showed many plaques in MS patients with normal CT exams.

In addition, since MRI uses high-field strength magnets rather than x-rays, there is no risk of radiation damage with the MRI exam. More recent studies in a series of questionable MS patients have established that MRI scanning has great utility in helping to establish the diagnosis of MS.^{11,13}

MRI also may be a valuable tool in monitoring the progression of disease. In 64 patients recently imaged at IUMC, we found significant correlation between number and size of MS plaques and amount of clinical disability. Specific clinical deficits did not always correlate with a plaque in the expected location, but the overall clinical disability had a high statistically significant correlation with severity of disease on MRI. 14 16

Thus, MRI appears to provide the most objective physical measurement of CNS white matter abnormalities yet available. MRI may prove useful in the assessment of the therapeutic effect of experimental drugs used in the treatment of MS. Repeated MRI scans in MS patients during clinical relapses may allow detection of new plaques or the enlargement of old ones and thus make possible further research into the dynamics of the disease.¹⁷

Unfortunately, there are inherent

disadvantages and significant technical limitations in the use of MRI scanning in the initial evaluation and follow-up care of MS patients. Foremost of these problems is a lack of specificity. MS plaques typically appear as areas of in creased signal intensity in the periventricular white matter. There may be just a few or dozens of these areas in the white matter (Figure 1). These lesions are suggestive but not diagnostic of MS.

A wide variety of other disease processes are associated with lesions that appear identical on MRI. Encephalomyelitis is a relatively rare disease that can occur directly from viral infections of the brain and spinal cord or indirectly as an autoimmune phenomenon. Encephalomyelitis also can occur rarely after routine vaccinations. It can cause periventricular lesions indistinguishable pathologically and radiologically by MRI from MS. Such patients are distinguished from MS by clinical history and disease course.

Some of the inherited leukodystrophies can cause periventricular white matter disease. In They are more common in childhood, but can occur in adult life, with the most common examples being metachromatic leukodystrophy and adrenoleukodystrophy. They can be distinguished by history with steady progression being the usual course, rather than relapses and remissions, and by detection of enzyme abnormalities in the blood.

Vasculitis secondary to lupus erythematosus or a variety of other diseases not infrequently affect the small vessels supplying the periventricular white matter in a patchy manner, causing ischemia or actual small strokes. The resulting lesions on MRI exam again cannot be distinguished from MS¹⁹ (Figure 2). These patients can have a relapsing remitting course and are diagnosed by systemic signs of lupus erythematosus or connective tissue disease and the presence of abnormalities in blood such as an elevated Westergren Sed Rate, ANA, etc., suggestive of these diseases.

In older patients, chronic ischemia or infarction secondary to atherosclerosis can affect the periventricular regions of the brain with minimal or no clinical findings and give a picture on MRI indistinguishable from MS. In a recent study, these lesions were seen in 30% of patients older than 60 and greater than 70% of patients with cerebrovascular risk factors and symptoms. Description Again, lack of history or CSF findings suggestive of demyelinating disease will distinguish these patients from those with MS.

The lack of specificity in the MRI findings suggestive of MS emphasize the point that good clinical correlation is still necessary for correct diagnosis. Abnormalities seen on MRI suggest, but by themselves cannot confirm, the diagnosis of MS.

If specificity in MRI scanning is lacking, sensitivity is not. In recent reports, patients clinically suspected of having MS were found to have MRI abnormalities more often than either CSF or EP abnormalities suggestive of MS.11.13 In a series of suspected MS patients imaged at the Indiana University Medical Center, 28 of 39 patients had white matter changes consistent with MS, but in 11 of these patients with abnormal MRIs there were no immunologic abnormalities detected on CSF analysis. The significance of the MRI findings in this subject of patients remains to be determined. Do they have active MS? What is the ultimate prognosis? These are questions for which the answers have yet to be determined and which may only be available with long-term follow-up.

There are other potential disadvantages to MRI scanning. Optic nerve lesions, a common site of early involvement in MS, are not well imaged by MRI. In fact, there are no reported cases of MS plaques in the optic nerve being imaged. Similarly, spinal cord lesions are common in MS and can cause the earliest or predominant clinical signs. Unfortunately, spinal cord imaging on a routine basis with MRI is still not practical for technical as well as



FIGURE 1: T2 weighted MRI scan demonstrates numerous periventricular plaques in a patient with definite MS.



FIGURE 2: MRI periventricular T2 lesions seen in this patient with systemic lupus erythematosus are indistinguishable from those seen with MS in Fig. 1.

economic reasons. Thus, MRI's deficiencies in imaging the optic nerve and spinal cord make visual and somatosensory evoked responses useful in selected patients and still necessary techniques to detect subclinical lesions.

A final limitation of MRI is our current inability to tell if imaged plaques are active or inactive. Repeated scans over several months with changes occurring in size and appearance of lesions can give some indications of disease activity, but further clinical pathological and radiological correlation is needed.

Abnormalities on MRI in MS patients need to be put in proper perspective. Bartel³ has developed a rating system that notes clinical findings, electrophysiologic abnormalities EP, spinal fluid abnormalities, and neuroimaging (MRI) results, and then uses this data to rate the probability that a patient has MS.

For a patient to be regarded as having definite MS, these essential criteria must be met:

1) A history of neurologic symptoms referrable to the CNS with relapses and remissions.

2) Evidence of two or more separate CNS lesions documented by clinical ex amination, evoked responses, or imaging techniques MRI.

3) Evidence of immunologic disturbance in the CNS as revealed by demyelinating spinal fluid profile.

To be regarded as having probable MS, a patient must have evidence of two or more CNS lesions and meet one of the other two essential criteria. Finally, patients with evidence of but one CNS lesion, but showing evidence of relapses or remissions or having suggestive immunologic abnormalities, would be diagnosed as possible MS.

This rating system has several ad vantages beyond judging probability of disease. It allows rational division of patients into groups that may have differing courses and responses to treatment. It eliminates some patients suspected of having MS by just clinical criteria and is a step toward defining

MS in terms of laboratory parameters rather than by just clinical means. With regard to MRI, it provides a context to rationally evaluate whether periventricular increased white matter densities on T2 images really indicate MS in a given patient.

In the future, improvements in MRI technology have the potential to further replace or reduce the need for ERs and CSF analysis in the initial diagnosis and follow-up care of MS patients. Specific developments include the use of higher magnetic field strengths and/or magnets whose field strength can be tuned. With stronger field strengths and improved computer software to process the information, scans with greater anatomic detail are possible. In addition, it may be possible to gait signal acquisition to the patient's EKG, allowing clearer images to be acquired.

The use of paramagnetic contrast agents such as Gadolinium-DTPA may be particularly useful in demonstrating areas of altered blood/brain barrier

functions such as occurs in active MS plaques and may give a better indication of whether a given patient has active demyelinating disease. The use of surface coils, devices which allow more detailed imaging of small areas such as spinal cord and or the optic nerve, may allow imaging of plaques in these areas which currently are not well seen by MRI.

Spectroscopy done with MRI may be the key to understanding chemical reactions in the living individual and may ultimately provide an exciting new tool to look at MS plaque dynamics. Finally, the recent use of computerized methods to quantitatively measure the size of lesions should provide a new means to follow disease course and response or lack of response to various drug therapies.²¹

In summary, MRI represents a large advance in the diagnosis and follow-up care of MS patients. Current limitations in diagnostic specificity (clinical and CSF findings are still necessary) and questionable abilities in distinguishing active from inactive MS plaques should be overcome in the future. Improvements will allow MS to be more conveniently and accurately diagnosed, as well as allowing more rapid objective assessment of potential therapies.

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Out-of-Hospital Cardiac Arrest: Patient Survival and Neurological Recovery



ADULT CRITICAL CARE MEDICINE

Methodist Hospital KAREN L. MAHAKIAN, M.D. Fellow in Cardiology

ORE THAN ONE HALF of the deaths in this country secondary to coronary artery disease occur suddenly. Two-thirds of these patients die before reaching the hospital, and about 25% have had no previous symptoms of heart disease. This review will examine studies conducted during the past 10 years that have identified several factors which determine survival and neurologic outcome following out-of-hospital cardiac arrest.

Survival

Currently, the hospital discharge rate for patients sustaining cardiac arrest outside a hospital is approximately 30%. Additional mortality at the end of the first year is 15% and after the second year is 50%.

Patients admitted to the hospital with out-of-hospital cardiac arrest have an associated acute transmural myocardial infarction in only 17% of cases.³ Those without an infarct have a higher mortality and an increased risk of another cardiac arrest resulting in sudden death.³ Of those who survive to be discharged, one-third will become victims of sudden death. These general statistics clearly suggest a need to identify factors that may favorably affect outcome.

Variables that influence a patient's chance of being discharged alive from the hospital after a cardiac arrest are:

1) if the arrest is witnessed; 2) the predominant ECG rhythm at the ar-

rest; 3) paramedic response time; and 4) bystander-initiated CPR. 3.4 A witnessed arrest usually provides a survival advantage as help is summoned or given more quickly.

The most common cardiac arrhythmia found at the time of initial monitoring is ventricular fibrillation, occurring in one-half to two-thirds of all cases. Other frequently encountered rhythms are asystole and electromechanical dissociation. Survival rates to hospital discharge are approximately 15-30% for patients in ventricular fibrillation/ventricular tachycardia, 6% for electromechanical dissociation and 1% for patients in asystole at the time of arrest.5 The frequency with which ventricular fibrillation degenerates into a bradyarrhythmia or asystole as the presenting arrhythmia is unknown.

Bystander-initiated pulmonary resuscitation (CPR) has a beneficial effect on outcome. Of 109 patients who received CPR by a bystander, 43% survived to be discharged home, while of 207 patients who did not receive early CPR only 21% were discharged home.6 Roth7 found a survival rate of 24% versus 7% for those receiving bystander CPR. Cummins⁸ showed that the chance for survival was 11/2 times greater with bystander CPR. Analysis of factors which may affect survival (including witnessed arrest, paramedic response time, age, sex and receiving advanced cardiac life support) indicated that only early initiation of CPR by a bystander was an independent factor in survival. However, even with bystander CPR, survival became dependent on the time of paramedic arrival and initiation of advanced cardiac life support (ACLS). A longer time between start of CPR and ACLS therapy was associated with

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a worse survival. The group with bystander CPR also had fewer patients with anoxic encephalopathy and shock, a lower initial pulmonary artery end diastolic pressure, greater cardiac output, lower total creatine kinase, and less myocardial dysfunction and neurologic impairment. Eisenberg showed that after the introduction of paramedic services in Seattle the rate of hospital discharges increased from 7 to 17%, thus suggesting an overall beneficial influence on patient survival.

Neurologic Outcome

The complex series of anatomic and biochemical events leading to brain failure begin within minutes after a cardiac arrest. Although overly simplified, it has been suggested that irreversible damage occurs if CPR is not started within four minutes after collapse and if advanced cardiac life support is not initiated within 10 minutes.8 A variety of studies have evolved that attempt to correlate early or evolving neurologic signs with ultimate outcome. In general, neurologic abnormalities associated with a high mortality rate and poor neurologic recovery include unresponsiveness, absence of pupillary light reaction, absence of oculovestibular or oculocephalic response, motor unresponsiveness, and absence of spontaneous respirations.

Earnest¹¹ compared neurologic status at the time of admission with the patient's subsequent long-term level of function. Of 117 patients, 17 patients were alert on admission and four of these died, while among the 100 unresponsive patients 60 died. The surviving 40 patients in the unresponsive group were then categorized as "high quality" or "low quality" survivors based on their ability to care for themselves. Initial neurologic observations that could statistically distinguish between the two groups and be predictive of "high quality" outcome were the presence of pupillary light reaction, oculocephalic reflexes, purposeful response to pain, and spontaneous respiration. Absence of one of these signs was associated with a mortality rate of 73-80%. If all signs were present, the mortality rate fell to about 40%. The number of days on a ventilator was not associated with quality of survival. A neurologist evaluated the same patients after three years to assess outcome.12 Of 20 survivors, two were normal, six had mild organic brain syndrome (OBS), five had severe OBS and seven had other neurologic impairments. Of all neurologic signs present at the time of original admission, only pupillary reaction to light was related to independent activity. Patients with good long-term results also usually had normal or near normal function at discharge.

A retrospective study by Snyder¹³ evaluated patients after either inpatient or out-of-hospital cardiorespiratory arrest. Of 34 patients who survived 24 hours after arrest, 100% of those alert after resuscitation survived, and 87% of patients comatose less than 24 hours survived to be discharged. A poor neurologic outcome was again shown to be associated with motor unresponsiveness, absent pupillary light reflexes, absent oculocephalic responses and absence of spontaneous respirations.

A follow-up prospective study¹⁴ found that the level and duration of coma during the initial 48 hours after arrest correlated inversely with survival and neurologic recovery. No predictions of outcome could be made before six hours after arrest as even some patients with low levels of consciousness up to that time had a good recovery.

An early deterioration of level of consciousness uniformly carried a poor prognosis. Seizure activity occurred in approximately 30% of patients and usually within 24 hours. 15 Partial or myoclonic seizures were most common and were associated with a worse prognosis. Abnormalities of brainstem reflexes were found to be frequent in the early post-resuscitative period. 16 Among survivors, reflexes returned

within 48 hours, but abnormalities after six hours were associated with a poor outcome.

Levy¹⁷ has published a highly reliable algorithm based on an evaluation of 210 patients that is used to predict survival and functional state at one year after an arrest. Using a series of algorithms compiled at different time epochs (i.e., at admission, and days 1, 3, 7, 14), neurologic outcome at one year was correlated with features of the clinical examination present for each time period. Correlations achieved a confidence level of 95% and were presented as probabilities of achieving a status of good recovery/moderate disability, or death/vegetative state. This article is highly recommended as a valuable resource when issues of long-term care planning or limitations in care are considered.

Predictive methods such as those presented above may serve as a guide for the physician, family, and medical team, but as with any considerations based upon probabilities, there are patients who fall outside the guidelines and have either better or worse recovery than expected. Such guidelines, however, do represent the best methods currently available to provide guidance during decision-making for patients sustaining an out-of-hospital cardiac arrest.

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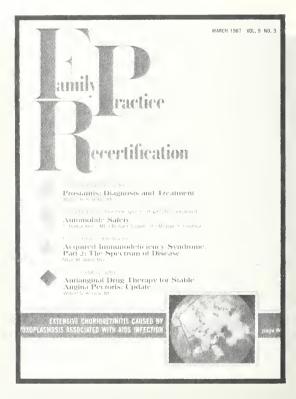
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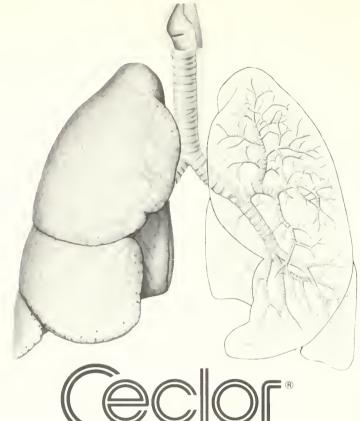
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BLE REACTIONS INCLUDE ANAPHYLAXIS

Administer cautiously to allergic patients Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis

Precautions:

- · Discontinue Ceclor in the event of allergic reactions to it
- · Prolonged use may result in overgrowth of nonsusceptible organisms
- Positive direct Coombs' tests have been re-ported during treatment with cephalosporins
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly
- · Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old Ceclor penetrates mother's milk Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients) Therapy-related adverse reactions are uncommon. Those reported include:

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- . Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment
- · Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/ arthralgia and, frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely Rarely, reversible hyperactivity, nervousness.

- insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Dther: eosinophilia, 2%; genital pruritus or vagnitis, less than 1%; and, rarely, thrombocy topenia.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
 Transient fluctuations in leukocyte count (especially in infants and children)
- · Abnormal urinalysis; elevations in BUN or serum creatinine.
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Non-Traumatic Out-of-Hospital Cardiac Arrests

Experience at Memorial Hospital of South Bend, 1985-86

PHILIP R. MYERS, M.D.¹ ELLEN SCHARMACH, R.N., M.S.² South Bend

T. JOSEPH COUNTY. Indiana borders Michigan in the central part of the state and has a population of 240,000. Its two major municipalities are South Bend with a population of 108,000 and Mishawaka with a population of 41,000.

Prehospital advanced life support (ALS) was started in 1975. The first paramedic class started in 1974 and the second in 1975. Of the 17 graduates, nine are still in the county.

Until the latter part of 1986, when a second private ALS provider went into service, there were three advanced life support providers in the county. A private service that covers the county, with the exception of within the city limits of Mishawaka, acts in dual response with private BLS providers, voluntary BLS providers and voluntary fire department first responders. The city of Mishawaka has its own municipal service and in South Bend, ALS service is provided by the South Bend Fire Department.

In 1981, in cooperation with the chief of the South Bend Fire Department,

several firemen were trained as EMTs so that each engine company could have at least one EMT on board when responding to critical medical calls. Also, many firemen were trained throughout the city as CPR instructors in order to conduct CPR classes in their neighborhoods.

In South Bend, when there is a call for a critically ill patient, the closest engine company and a centrally located ALS (paramedic) ambulance are dispatched simultaneously, with average response times of three minutes and five minutes, respectively. In the county, it is possible to have paramedic response times of up to 20 minutes, with the norm being 7-8 minutes.

Memorial Hospital of South Bend is a community and regional care center of 526 beds. There were approximately 32,500 Emergency Department visits per year in 1985 and 1986. Nearly all medical specialties are represented on the medical staff. In particular, there is an excellent and readily available cardiology staff.

During 1985 and 1986, 278 patients who had sustained out-of-hospital cardiac arrests were brought to Memorial Hospital's Emergency Department by St. Joseph County paramedics. Ninety-four survived to be discharged (saves). Of those having ventricular fibrillation or ventricular tachycardia, 45% (92/204) survived to go home, while those rates reported elsewhere seldom reach 30%.¹

This study was conducted on a concurrent month-to-month basis by Ellen Scharmach, R.N., M.S., E.M.T.-P, C.E.N., Memorial Hospital's Prehospital Education coordinator, and

confirmed by Philip R. Myers, M.D., F.A.C.E.P., director of Emergency Medical Services. The initial cardiac rhythm was taken from the ambulance run record as supported by the EKG rhythm strip. Every patient was followed closely and those discharged to their homes or extended care facilities were verified by hospital discharge summaries.

Patients were categorized monthly by initial rhthym: asystole, electrical-mechanical dissociation, ventricular fibrillation (witnessed and unwitnessed) and unconscious and conscious ventricular tachycardia; and by disposition—died, no resuscitation (usually patients with otherwise terminal diseases), died in the field or in the Emergency Department (difficult to differentiate), died in the Coronary Care Unit, or discharged alive.

Patients with non-traumatic cardiac arrests were treated and stabilized on the scene by paramedics. Paramedics follow standing orders, report findings and send the EKG strip to a hospitalbased emergency physician via coronary observation radio (COR). The emergency physician returns directions and medication orders via the COR. When the patient is stabilized as much as possible, he/she is then transported to the Emergency Department. The American Heart Association's Advanced Cardiac Life Support Guidelines are followed by both paramedics and physicians. All paramedics and physicians are ACLScertified. There are two paramedics on each ambulance.

Because of the interesting similarity of the numbers in 1985 and 1986,

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the yearly totals are listed separately and combined in the accompanying tables.

Exact survival rates around the country are hard to determine by research of the literature. The most reported study was by Mickey Eisenberg, M.D., *et al* in Seattle, Washington from 1976-79.^{2,3,4,5} They showed an overall survival rate of 17% with paramedics, compared to 7% with basic life support personnel. Because

of the hopelessness of resuscitation of asystole and EMD, most survival rates are reported for ventricular fibrillation and ventricular tachycardia.⁶ Eisenberg reports 28% from this group. R.J. Myersburg, M.D. and associates, in a study done between 1975 and 1978, showed combined VF/VT survival rate at 29%.⁷ Their pre-paramedic rate was also 7%. A 1979-80 study in Vancouver, British Columbia, by Les Vertesis and

associates, revealed an overall survival rate by EMT (BLS) at 2% and 11% by paramedics; their VF/VT survival rate by paramedics was 24%. The most recent save rates we could find were reported in 1986 by Aprahamian, et al from Milwaukee taken from 1983 data; they reported a save rate for ventricular fibrillation of 25% on a select group of CPR-initiated patients.

Much of the printed research in this area is involved with factors that are

TABLE #1	LE #1 NON-TRAUMATIC OUT-OF-HOSPITAL ARRESTS 1985						
DISPOSITION	ASYSTOLE	EMD	UNWITNESSED V. F1B	WITNESSED V.FIB	UNCONSCIOUS V-TACH	CONSCIOUS V-TACH	TOTALS
No Resuscitation	1	0	1	0	0	0	2
Died in Field/E.D.	22	16	32	2	0	0	72
Died in CCU	0	0	19	2	0	0	21
Discharged home	1	0	18	16	2	9	46
Saved Home/Total	1/24	0/16	18/70	16/20	2/2	9/9	46/141
Save Rate	4.2%	07	75.7%	807	100%	100%	32.6%
Expected survival rate vs. actual	< 1% vs	2.57		28% vs	44.5%		<pre>< 20% vs 32.6%</pre>

TABLE #2	NON-TRAUMATIC OUT-OF-HOSPITAL ARRESTS 1986						
DISPOSITION	ASYSTOLE	EMD	UNWITNESSED V. FIB	WITNESSED V. FIB	UNCONSCIOUS V-TACH	CONSCIOUS V-TACH	TOTALS
No Resuscitation	2	0	0	0	0	0	2
Died in Field/E.D.	20	11	38	1	2	0	7.2
Died in CCU	0	0	13	2	0	0	15
Discharged home	1	0	21	15	6	5	48
Saved Home/Total	1/23	0/11	21/72	15/18	6/8	5/5	48/137
Save Rate	4.3%	0%	29.2%	83%	75%	100%	35%
Expected survival rate vs. actual	< 17 vs	2.9%	28% vs 45.6%			< 20% vs 35%	

TABLE #3

NON-TRAUMATIC OUT-OF-HOSPITAL ARRESTS 1985-86

DISPOSITION	ASYSTOLE	EMD	UNWITNESSED V.FIB	WITNESSED V. FIB	UNCONSCIOUS V-TACH	CONSCIOUS V-TACH	TO LACS
No Resuscitation	3	0	1	0	0	0	4
Died in Field/E.D.	42	27	70	3	2	()	144
Died in CCU	0	0	32	4	0	0	36
Discharged home	2	0	39	31	8	14	94
Saved Home/Total	2/47	0/27	39/142	31/38	8/10	14/14	94/278
Save Rate	4.3%	0%	27.5%	81.6%	80%	100%	33.87
Expected survival rate vs. actual	< 1% vs	2.7%	28% vs 45.1%				20% vs 33.8%

certainly essential, 10,11 but it would be very helpful for purposes of comparison to standardize a report form for raw data and have a central (national) clearing house that reports save rates on a regular basis.

No matter how we look at the numbers, it appears our save rate is much greater than that being reported in other areas. On the prehospital side, our dispatchers, first responders, EMTs and paramedics should be commended on a job well-done. We feel the basis for our prehospital success is the longevity of our paramedics, most of whom have been with the system for many years and meet requirements far and above those required by the state. The care given at the hospital by emergency nurses and physicians, special care nurses and dedicated cardiologists is certainly a major factor in

contributing to these excellent save rates.

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NEPHROLITHIASIS: Clues for the Stone Detective

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TITH THE ADVENT OF extracorporeal shock wave lithotripsy (ESWL), interest in nephrolithiasis has mushroomed. Our understanding of the causes of this disease is limited at this time and hope for a cure seems distant. However, the surgical and medical advances in kidney stone disease are truly staggering. But instead of treating the causes, we must usually settle for treating the effects. This article represents the third in a series of reports detailing a comprehensive approach to this common disease at the Methodist Hospital of Indiana Institute for Kidney Stone Disease.

The surgical improvements in the treatment of nephrolithiasis are by now well known to most physicians. Extracorporeal shock wave lithotripsy (ESWL), percutaneous nephrostolitho-

Abstract

The last few years have witnessed a renewed interest in kidney stone disease. Progress in the surgical treatment of urinary tract calculi is well documented. Recent advances in the metabolic aspects of kidney stone disease are presented. Study of 250 pa-

tients resulted in a recognized diagnosis or metabolic abnormality in 87%. A system for patient work-up is presented, including an extensive list of risk factors and a classification. Current treatment plans for the various types of calculi are summarized.

tomy (PNL) or combinations thereof allow the removal of virtually all upper urinary tract calculi, including staghorn calculi, and have rendered open renal stone surgery to historic status only. Additionally, ureteroscopy has improved the success rate for the manipulation of symptomatic distal ureteral calculi to greater than 95% at the Methodist Hospital of Indiana. Presently, a laser probe for the fragmentation of ureteral stones is being tested at the Institute for Kidney Stone Disease. Emphasizing the dramatic changes occurring in the management of kidney stone disease is the observation that less than 1% of the 3,000 patients treated at the Methodist Hospital of Indiana in 1985 required an open surgical procedure to remove their stone.

Methodist Hospital of Indiana received the first Dornier ESWL unit in the United States and makes use of many other new technologies. More ESWL patients have been treated at the Methodist Hospital of Indiana than anywere in the world. In order to study and treat these patients in a comprehensive fashion, a Metabolic Kidney Stone Clinic has been established. After studies are obtained, a treatment plan is provided to local physicians for use in the long-term management of nephrolithiasis patients.

Less than half of all kidney stone patients will require formal intervention by a urologist. The majority of patients who form a stone in the upper urinary tract will continue to form new stones or will have retained fragments following lithotripsy, which may grow to cause future problems. The progress in nepholithiasis, though it attains less publicity, has also been substantial. Progress research in gastrointestinal disease effects on the kidney, of various forms of renal tubular acidosis, of the effect of heterogeneous nucleation of uric acid crystals on calcium oxalate stones, of various forms of hypocitraturia, of advances in the treatment of infection stones, and of understanding in the diagnosis and treatment of cystine stones has catapulted our knowledge and aided in the treatment of these pa-

tients. Indeed, with proper medical,

radiological, and laboratory investiga-

tion of the patient, many authors

believe that 80-90% of kidney stone

disease can be cured or controlled.3-6

In this article we present our approach

to the medical evaluation of the

nephrolithiasis patient and results of

the study on 250 patients referred to

the Metabolic Kidney Stone Clinic.

Introduction

A search for the cause(s) of kidney

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stone disease is the mission of every metabolic evaluation: The goal is the eradication of the disease. Surgery treats the symptoms, as it were, of kidney stone disease. The following details the who, what, where, when and why of metabolic kidney stone evaluation.

Why

- 1. Reduce morbidity and mortality. Renal and ureteral colic are generally acknowledged to be among the worst pain a human being can suffer. Fortunately, end-stage renal disease, or mortality secondary to nephrolithiasis, is rare. Because of the usually intermittent nature of the disease, the patient (and the physician), often gradually lose sight of the discomfort, however severe it was.
- 2. Cost-saving. Preminger and associates⁶ have described the cost-saving nature of stone prevention. Although ESWL is less expensive than open surgery,⁷ it is still very costly. Percutaneous nephrostolithotomy costs are no different from open surgery. These procedures are outstanding advances because of their lessened morbidity, but resources also need to be focused on prevention. It should be kept in mind that most kidney stone formers are people in the midst of their most productive years.
- 3. Explore the mysteries of the human body. Detailed study of this disease has and will continue to yield information regarding normal and abnormal function of the kidney, gastrointestinal, and endocrine systems.

What (Symptoms)

- 1. Typical renal colic. This pain is usually sudden and severe; typically, its location is in the flank region and radiates to the lower abdominal quadrant and groin area. Associated gastrointestinal symptoms are common.
- 2. Atypical back pain. Renal pelvic and calyceal stones may cause a dull ache in the flank, back, or lower abdomen. It can be aggravated by activ-

ity at times. Because this discomfort does not resemble colic, it is commonly misdiagnosed.

- 3. Other GU symptoms. Frequency, urgency, and dysuria may be secondary to ureteral or bladder spasm from a calculus. These symptoms do not always represent urinary tract infection, which must be ruled out by urinalysis and urine cultures. Microscopic and gross hematuria are common warning signs.
- 4. Gastrointestinal symptoms. Any patient with acute abdominal pain, gastrointestinal symptoms and gross or microscopic hematuria should be suspected of having a urinary tract calculus and should have appropriate radiologic studies.

Where

Patients should be evaluated in the outpatient setting of their physician's office or a metabolic kidney stone clinic. The hospital is a poor choice because of differences in calcium metabolism at rest, absence of their usual diet and fluids, and problems in urine collection.

When

People should be on their usual diet and fluids and off medications that could alter results (e.g., thiazide diuretics). Patients should be studied before surgery or after they have sufficiently recovered from surgery.

Who

- 1. Recurrent stone formers. Once stones have recurred, studies have shown that they are likely to continue unless they can be prevented by further evaluation.⁸
- 2. Cystinurics. Only one-half of cystine stone patients have 100% cystine stones. Detailed study can produce evidence of other diseases or stresses that may cause kidney stones. In the Mayo Clinic study, primary hyperparathyroidism, idiopathic hypercalciuria, hyperuricemia, hyperthyroidism and urease-producing bacteria contributed to the problem of

cystinuria. Twenty four hour urine cystine must be quantitated in a reliable laboratory in order to form a basis for treatment.

- 3. Infected lithiasis. Up to one-half or more patients with infection stones have a metabolic defect which initiates or contributes to the problem.¹⁰
- 4. First-time stone formers. Most first-time stone patients can benefit from evaluation. This is especially true if one or more of certain risk factors are present. Examples of such risk factors are listed in *Table 1*.

TABLE 1 Evaluation of First-Time Stone Formers

- 1. Strong family history
- 2. Youth (under 25 years of age)
- 3. Older (over 55 years of age)
- 4. Staghorn Calculus
- 5. G.I. Patients-Crohn's, ileostomy, jejunoileal bypass
- 6. Hypercalcemia
- 7. Cystinurics
- 8. Infected lithiasis
- 9. Abnormal acid base status
- 10. Uric acid and urate stones
- 11. Sarcoid patients

Radiologic and Laboratory Evaluation Radiology

An intravenous pyelogram (IVP) should be obtained if any concern regarding obstruction is present. It is mandatory prior to ESWL. IVP may also be needed to rule out tumors, polycystic kidneys, medullary sponge kidneys, etc. For plain films, KUB with tomograms is preferred for precise definition of number, size and location of stones. Further testing such as ultrasound, CT scan, or nuclear medicine studies may be necessary.

Laboratory

CBC, chemistry profile, and urinalysis are obtained in the fasting state. Coagulation studies are added if a procedure is anticipated. Urine gram stain or colony count should be per-

TABLE 2 Diagnosis—250 Patients									
Idiopathic calcium oxalate/calcium phosphate	33		.163						
Normal	0.0								
2011	. 18								
Hypercalciuria	. 72								
Hyperuricosuria	. 3								
Hypocitraturia	. 30								
Hypomagnesuria .	. 7								
Enteric hyperoxaluria			20						
Crohn's Disease	3								
Diet	. 3								
Jejunoileal bypass	14								
Struvite			. 14						
Cystinuria			. 13						
Primary hyperparathyroidism			. 11						
Medullary sponge kidney			. 10						
Uric acid/urate			. 8						
Renal tubular acidosis			- 5						
Sarcoidosis			. 3						
			2						
Triamterene			2						
Obstructive			. 1						

formed and culture and sensitivity done to rule out urinary infection. A 24-hour urine specimen is analyzed for volume, creatinine, calcium, phosphorous, uric acid, citrate and oxalate. We also do sodium and magnesium for study purposes. If possible, the 24-hour urine should be done in a specialized laboratory dedicated to kidney stone disease.

Results

The diagnoses on the 250 patients are listed in *Table 2*. The diagnosis was made after study of all radiologic and laboratory information, including stone analysis. The predominant or sole abnormality of the 24-hour urine was used for classification purposes. Thus, 217 of 250 (87%) patients had a recognized metabolic abnormality or disease.

Theories of Stone Formation

Despite a large body of work, no unifying theory of stone formation has appeared. Most likely, the cause is multifactorial and involves some or all of the following concepts.

Anatomic—Abnormal urothelial surfaces, Randall's plaques, ectactic tubules, and obstruction within the urinary tract may provide a stable nidus for crystal growth or contribute to stasis of urine.

Supersaturation—Overexcretion of urinary solutes (calcium, oxalate, and uric acid) is very important in the causation of stone disease. While supersaturation is necessary for crystalluria, crystals can be found in normal humans.

Matrix—All stones contain varying amounts of glycoproteins that could initiate stone formation. Whether they are causal or innocent bystanders is still not understood.

Inhibitors—Various chemical or protein inhibitors of calcium oxalate or calcium phosphate exist. Compounds such as pyrophosphates, citrates, phosphocitrates, magnesium, and glycoproteins may be very important in the scheme of stone formation.

Since none of these theories alone seem to be responsible, unified theories—the "free-particle" theory and the "fixed-particle" theory—have been offered. Obviously, much work needs to be done to solve the riddle of kidney stone disease.

Discussion

Many recent excellent reviews have detailed classification, types, and treatment of kidney stone disease. ¹²⁻¹⁶ Much of the credit regarding practical application of this information must be given to Lynwood Smith, who has helped clarify metabolic and surgical concepts with his definition of "activity."

"Surgical activity" or the concept of a surgical stone is one where there is:

- 1. Pain (colic, severe lumbar ache)
- 2. Obstruction (with or without pain)
- 3. Infection (struvite stones or calcium stone associated with infection).
- 4. Gross hematuria This could be added as an additional sign of surgical activity, though it is usually present with one of the above signs.

This concept does not imply that the patient will continue to make stones. A "metabolically active" stone is one where there is:

- 1. Radiologic proof of stone growth within the past year.
- 2. Radiologic proof of new stone formation within the past year.
- 3. Passage of gravel or sand within the past year.

Patients are placed in an "indeterminant" category if evidence is inconclusive and "inactive" if evidence of no activity exists. This system provides a basis for reference and further study. To take the concept a step further, a medical stone (active or inactive metabolically) would be relatively asymptomatic and a surgical stone (active or inactive metabolically) causes the above symptoms. A medical stone can become a surgical stone in a matter of minutes. Patients with a surgical stone will need urological consultation. There are many other ideas in the evaluation of nephrolithiasis patients which are clues for the stone detective (Table 3). Patients must be questioned carefully regarding all the following

TABLE 3 Clues (Risk Factors)

Age of onset
Sex
Congenital diseases
Inherited diseases
Clinical pattern/history
Previous GU tract surgery
Previous multiple urinary tract
infections
Gout
Gastrointestinal disease/surgery
Diet
Medications
Residence
Occupation/Hobbies
Stone analysis

facts and risk factors concerning stone disease. Some of these can be changed with therapy and some cannot:

Clues (Risk Factors)

- -Age of onset
 - -Child (1-13)—Cystinuria, primary hyperoxaluria, renal tubular acidosis.
 - -Youth (13-25)—Idiopathic lithiasis, cystinuria, renal tubular acidosis, medullary sponge kidney, primary hyperoxaluria.
 - -Older (over 50) Primary hyperparathyroidism, medications, idiopathic hypercalciuria.
- -Sex
 - -Male 4-5:1 Idiopathic lithiasis.
 - -Female 2-3:1—Primary hyper-parathyroid, struvite.
- -Congenital
 - -Anatomic, medullary sponge kidney, horseshoe kidney.
- -Inherited
 - -Cystinuria, renal tubular acidosis, primary hyperoxaluria, ? idiopathic hypercalciuria.
- -Clinical
 - -Pain pattern, number passed, side(s), surgeries, treatments, evaluations, types of surgery.
- -Previous surgery
 - -Possible stricture, anatomic problems, possible bacterial

contamination.

- -Previous Infection
 - -Possible urease producing bacteria.
- -Gout
- -Gastrointestinal diseases
 - -Post jejunoileal bypass, Crohn's disease, chronic diarrhea, malabsorption, ileostomy.
- -Diet
 - -Dairy products, purine, oxalate, sodium, carbohydrate, ? caffeine excess.
- -Medications
 - -Calcium, vitamin C, acetazolamide, triamterene, furosemide, ethacrynic acid, cortisone, phenolphthalein and other laxative

abuse, vitamins D and A.

- -Residence
- -Southeast U.S. and others.
- -Occupation/Hobbies
 - -High fluid loss and/or low fluid intake.
- -Stone Analysis
 - -Calcium oxalate/calcium phosphate, hydroxyapatite, uric acid/urates, cystine, struvite, xanthine, triamterene and other drugs.

Once metabolic activity is determined and risk factors are identified, a search for etiology should be attempted. Various classifications ¹² ¹⁶ (*Table 4,5*) are useful, but in the end the experience and ingenuity of each in-

TABLE 4 Etiologic Classification of Nephrolithiasis

According to Lynwood H. Smith

- I. Renal tubular syndromes
 - A. Cystinuria
 - B. Renal tubular acidosis
 - 1. Distal tubular defect (type 1 RTA)
 - 2. Carbonic anhydrase inhibitors
- II. Enzyme disorders
 - A. Xanthinuria
 - B. Primary hyperoxaluria
- III. Hypercalcemic states
 - A. Primary hyperparathyroidism
 - B. Sarcoidosis
 - C. Immobilization
 - D. Hypervitaminosis D
 - E. Milk-alkali syndrome
 - F. Neoplastic disorders
 - G. Cushing's syndrome
 - H. Hyperthyroidism
- IV. Uric acid lithiasis
 - A. Idiopathic uric acid lithiasis
 - B. Gout
 - C. Myeloproliferative disorders
 - D. Low urinary output states
 - E. Idiopathic renal lithiasis
 - F. Hyperparathyroidism
- V. Urolithiasis associated with gastrointestinal disease
 - A. Uric acid lithiasis
 - B. Acquired hyperoxaluria
- VI. Secondary urolithiasis
 - A. Infected renal lithiasis
 - B. Obstructive urolithiasis

TABLE 5 Classification of Nephrolithiasis

According to C.Y.C. Pak

Absorptive hypercalciuria
Type I
Type II
Renal hypercalciuria
Primary hyperparathyroidism
Hyperuricosuric calcium urolithiasis
Enteric hyperoxaluria
Uric acid lithiasis
Infection lithiasis
Renal tubular acidosis
No metabolic abnormality
Unclassified hypercalciuria

vestigator is important. There is potential for overlap among the various classifications. Differentiation of absorptive (GI) hypercalciuria from renal hypercalciuria is usually not required. While very attractive from a physiological standpoint, its clinical relevance remains to be determined. Our approach has been to search through various differential diagnoses and crystallize (no pun intended) an etiology (Table 6).

Our plan, then is to investigate the overall patient and establish a CALC profile (Table 7) and provide follow-up advice. The type of stone that forms at any one time depends on many factors-inherited diseases, presence or absence of urease-producing bacteria, diet, medications, urine pH etc. Once this is understood, one can appreciate that calcium stone formers can have some or all of their stone be uric acid. The converse is also true. In addition, eystinuria patients on occasion have produced uric acid or calcium stones. Many struvite stone formers have another metabolic abnormality and may have complete struvite stones or ones mixed with calcium or cystine.

Treatment

The real art in the medical management of nephrolithiasis is in knowing whether to treat, when to treat, how to treat, and how to follow-up the pa-

tient. Whether to treat at all is the first decision required. If the patient's metabolic activity is active or inactive, the decision is simple. If the clinician is unsure of activity, perhaps only dietary and fluid adjustments are needed. One must be aware of the so called "stone clinic effect" and not place patients on medications that are unnecessary. The stone clinic effect refers to the observation that when metabolic activity is indeterminant, up to two-thirds of patients will remain metabolically inactive with simple dietary and fluid advice, because some of them are "inactive" to begin with and others will respond to less complicated treatment programs. With an accurate assessment of risk factors, radiologic studies, laboratory studies, including an accurate 24-hour urine, a treatment plan can be charted.

Cure of nephrolithiasis is possible, but more often we must settle for control of this chronic disease. Various examples of cure are parathyroidectomy for primary hyperparathyroidism, surgery to correct anatomic genitourinary tract abnormalities and removal of various medications. Control of kidney stone disease may be achieved in nearly every case if appropriate therapy is given. Various treatment plans may need to be tried before this goal is achieved.

Calcium stone disease may be treated by dietary, fluid and medical measures. Dairy products should be limited to one or two servings daily. Thiazide diuretics are used to lower urine calcium and may also affect urine oxalate.18 Orthophosphates may be used in hypercalciuric or normocalciuric states. 19,20 Citrates are helpful in restoring urine citrate to normal or as an adjunct to thiazide therapy.21 Allopurinol is useful in states of hyperuricosuria²² and its use has been suggested in patients with normal findings, although this is controversial. The efficacy of magnesium therapy is inconclusive at this date.

Patients with uric acid stone disease may be helped by diet, fluid, and

TABLE 6

Methodist Hospital Institute for Kidney Stone Disease Classification

CALCIUM OXALATE/ PHOSPHATE

Normal

Low volume

Hypercalcemia

Hypercalciuria

Hyperoxaluria

Hyperuricosuria

Hypocitraturia

Hypomagnesuria

Anatomic, obstructive

- -Medullary sponge kidney
- -Horseshoe kidney
- -Misc.

URIC ACID/URATE

Gout

Idiopathic

Hyperuricosuria

Primary hyperparathyroidism Myeloproliferative diseases

Gastrointestinal diseases

CYSTINURIA

INFECTED UROLITHIASIS

With metabolic abnormality Without metabolic abnormality

RARE

Matrix

Triameterene

Xanthinuria

Silica

Drugs

2,8 dihydroxyadenine

TABLE 7 CALC Profile

Classification of metabolic activity Assessment of clues (risk factors) List etiology

Comprehensive treatment plan

medicines. They should avoid hyperuricosuric agents. Citrates may be used to raise urine pH if it is persistently low or allopurinol may be tried when hyperuricosuria rather than persistently acid urine is the problem. Lowering dietary purine intake and increasing fluid consumption are very important.

Adequate intake of fluid is the cornerstone of therapy for cystine stone formers. Daily excretion of cystine usually does not vary more than 10-15%. Investigators^{23,24} have found that 200-300 mg of cystine per liter of urine will be soluble at normal urinary pH. Up to twice that amount is soluble at a urine pH of 7.5. Citrates may be used to elevate urine pH to levels stated, but they must be taken so as to maintain an ideal level day and night. Penicillamine may be used to lower 24-hour urine cystine levels in patients with very high excretion rates or in certain problem cases. Attention must be given also to the fact that other metabolic problems have been found in patients with cystinuria.

Struvite stones almost always demand both surgical and medical treatment. Unless all stone material is eradicated, sterilization of the urine may not be possible. Such a plan requires an experienced surgeon, a patient clinician and a good bacteriology laboratory. Once acute surgical and antibacterial care is given, a plan of urine acidification and prophylactic antibiotics is necessary. If this is not successful, acetohydroxamic acid, a urease inhibitor, may be required.25 This drug has limited usefulness due to its propensity for causing hemolytic anemia, thrombophletitis tremulousness.

A large body of evidence has now shown that if the stone detective will determine metabolic activity, sift through various risk factors, establish an etiology after various examinations, determine a treatment plan, and follow-up with further advice, the lives of countless kidney stone patients may be made more comfortable.

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Maternal and Fetal Risks in Women with Heart Disease

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PREGNANCY RESULTS IN marked changes in cardiovascular status, including increases in ventricular stroke volume, heart rate, cardiac output and a decrease in systemic vascular resistance. These physiologic changes are generally well tolerated. In women with underlying heart disease, however, cardiac decompensation is a particular area of concern.

In the past, many women with heart disease were either advised against pregnancy, or the risk to the mother and fetus was not correctly estimated. In many instances, pregnancy occurred in the setting of undiagnosed heart disease. Recent changes have allowed not only recognition of these patients, but repair of many congenital lesions. With the availability of improved surgical repair of cardiac abnormalities, there has been an increasing number of such women reaching reproductive age.

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Prior reports have noted an increase in maternal and fetal complication rates in pregnancies occurring in women with heart disease, particularly in patients with cyanotic congenital heart disease.25 A potential limitation of many of these earlier reports is the inclusion of women enrolled as early as the 1960s when neither accurate diagnosis nor anatomic repair procedures for congenital lesions were uniformly available. The purpose of this study is to review the data available from the Indiana University Medical Center about this subject and assess maternal and fetal complications in a contemporary patient population.

Methods

Patient Identification

A chart review was conducted at University Hospital and Wishard Memorial Hospital, Indiana University Medical Center (IUMC) to identify women with pregnancy complicated by heart disease between the years 1984-1986. Purposefully excluded were women with hypertension as their sole abnormality. An obvious bias is that women with milder abnormalities (uncomplicated mitral prolapse, for instance) are not routinely coded as pregnancy complicated by heart disease, and as such only those with more obvious or symptomatic disease are included. Information obtained included the type of heart disease, current (records available for births at IUMC) as well as previous (non-IUMC care) pregnancy outcomes, symptoms and complications of the mother and fetus during pregnancy, medications used during pregnancy, functional classification of the mother, and sterilization procedure, if performed.

Definitions of Heart Disease and Outcome

Maternal heart disease was classified by standard definitions and separated into congenital and acquired heart disease. Congenital heart disease was further classified into cyanotic or non-cyanotic, and into repaired, repaired with residua, palliated, or unrepaired. Specific cardiac abnormalities and the number of patients in each category are listed in Table 1. Functional classification of the mothers was by the New York Heart Association criteria. Maternal complications were defined as clinical outcomes not consistent with a normal pregnancy. These included development of pulmonary edema, other evidence of right or left ventricular failure, symptomatic arrhythmia, syncope, near syncope, myocardial infarction and death.

A pregnancy ending in delivery of an infant that was premature, was of low birth weight, had intrauterine growth retardation, respiratory distress syndrome, neonatal death, or other significant delivery or neonatal complication was defined as a fetal complication. Prematurity was defined as delivery of an infant less than 37 weeks gestation and term delivery as delivery after 37 weeks gestation.6 Intrauterine growth was assessed using the Colorado nomogram and classified by percentile. Spontaneous abortion was defined as the loss of a fetus less than 20 weeks gestation, and at greater than or equal to 20 weeks gestation, the loss was considered a stillborn

Results

Forty-three women were identified with the diagnosis of pregnancy or

TABLE 1

Types of Maternal Heart Disease (Numbers refer to number of women with each lesion)

Acquired Heart Disease (20)

Coronary artery disease (1)

Cardiomyopathy, congestive (1)

Cardiomyopathy, hypertrophic (2)

Valvular heart disease (12)

Mitral prolapse (6)

Mitral stenosis (3)

Aortic insufficiency (2)

Other (1)

Arrhythmia (4)

Premature ventricular contractions (2)

Paroxysmal supraventricular tachycardia (1)

Paroxysmal atrial tachycardia (1)

Congenital Heart Disease (23)

Acyanotic (14)

Ventricular septal defect (8)

Atrial septal defect (2)

Patent ductus arteriosis (2)

Tricuspid atresia (1)

Pulmonic stenosis (1)

Cyanotic (9)

Ventricular septal effect with Eisenmenger's Syndrome (1)

Pseudotruncus (1)

Complex congenital heart disease (4)

Tetrology of Fallot (3)

gynecologic procedures complicated by cardiovascular disease. Sterilization was performed in five women prior to any pregnancy; therefore, the reported pregnancies occurred in 38 women. The primary heart disease diagnoses are listed in Table 1. Congenital heart disease was the largest class of maternal heart disease noted. Several patients presented with more than one abnormality, in which case only the predominant abnormality is listed. There were 41 pregnancies for the stated time period (recent pregnancies) for all patients in this study. Complete data for mother and infant were available for these pregnancies. One patient had a medically advised abortion with sterilization, one a medically advised abortion without sterilization, and one an elective abortion. As noted above, five women with cyanotic congenital heart disease underwent elective sterilization prior to any pregnancy. Three women were lost to follow-up after their initial visit.

Adv = medically advised

Overall (i.e., current plus prior) pregnancy results were also tabulated. There were an additional 35 prior pregnancies recorded in these patients, for a total of 76 pregnancies in 38 women. Complete data were not available for many of the prior pregnancies and these are tabulated separately from the recent pregnancies. The recent pregnancies resulted in the birth of 22 term infants (54%), 12 premature infants (29%) and one spontaneous abortion (2%).

Overall fetal outcome for recent and prior pregnancies is tabulated in Table 2. Fetal outcome as a function of the type of maternal heart disease is outlined in Table 3 for the larger classes of heart disease. One patient with coronary disease had two prior uneventful pregnancies and a subsequent third pregnancy complicated by myocardial infarction; this pregnancy was subsequently terminated. Of two pregnancies in women with hypertrophic cardiac myopathy, one resulted in a premature infant. A single pregnancy was noted in the patient with congestive cardiomyopathy; this resulted in neonatal death probably not related to maternal heart disease (chorioamnionitis). One premature infant in a mother with valvular disease and one term infant in a mother with acvanotic congenital disease each had congenital heart disease. Five of the premature infants had further complications (respiratory distress, low birth weight

TABLE 2
Fetal Outcome: Recent and Overall Pregnancies

	#Recent	%Recent	#Overall	%Overall
Term infant	22	54%	39	51%
Premature birth	12	29	15	20
Stillbirth	0	0	2	3
Ab-spont	1	2	8	11
Ab-elec	1	2	7	9
Ab-adv	2	5	2	3
Unknown	3	7	3	4
Total	41		76	

TABLE 3
Fetal Outcome as a Function of Type of Maternal Heart Disease

	CHD-Cy	anotic	CHD-Acyanotic		Valvi	Valvular		Arrhythmia	
	Recent	All	Recent	All	Recent	All	Recent	All	
Term Infant	2	2	6	8	10	20	2	5	
Premature Infant	1	2	7	8	1	2	2	3	
Stillborn	0	0	0	1	0	0	0	1	
Ab-spont	0	0	0	4	1	3	0	1	
Ab-adv	1	1	0	0	0	0	0	0	
Ab-elec	0	0	1	4	0	3	0	0	
Unknown	0	0	1	1	1	1	1	1	

Ab = abortion; Spont = spontaneous; Adv = medically advised; elec = elective; CHD = congenital heart disease

for age, neonatal death); the remainder were uncomplicated.

The patients' functional classes during pregnancy compared to infant complications are listed in Table 4. Functional classification in these women remained constant from their antenatum class in all but two patients who advanced one class higher. Of Class I patients, 15 of their 22 (68%) infants were without complications. Maternal heart defects present in the seven mothers with complicated pregnancies included four with acyanotic congenital heart disease, two with valvular disease and one with hypertrophic cardiomyopathy. The complication rate of Class I mothers was 32%.

In Class II patients, only four of the 13 (31%) pregnancies were completed without fetal complications. Maternal disease present when infants had complications included three women with acyanotic congenital heart disease, one with congenital heart disease, three with arrhythmias, and two with valvular disease. The complication rate of Class II patients was 69%. No patients were encountered in New York Heart Association Class III or IV.

The specific maternal complications appeared to be related to the type of heart disease (*Table 5*). The single patient with coronary disease had a myocardial infarction in the first trimester and subsequent termination of pregnancy. Two patients with cardiomyopathy (one obstructive, one

congestive) had transient pulmonary edema at the time of delivery. Patients with arrhythmias tended to note a subjective increase in their arrhythmia but otherwise had uneventful outcomes from a maternal standpoint. The maternal outcome for women with valvular and congenital heart disease are listed in *Table 5*. There were no maternal deaths encountered in this series.

The repair status of women with congenital heart disease had little effect on pregnancy outcome. Fetal complications occurred in two of four mothers

with repaired acyanotic disease. These were both premature infants, one of whom subsequently died (chorioamnionitis). Fetal complications were seen in five of nine mothers with unrepaired acyanotic heart disease and consisted of five instances of prematurity, two of which were complicated by respiratory distress syndrome in the infant. Cyanotic congenital heart disease results were similar. Women who went on to deliver had been previously repaired, one with residua. The mother who had the residual lesion had a pregnancy with fetal com-

TABLE 4
Maternal Functional Classification vs. Infant
Complication: Recent Pregnancies Only

	I	II
No Complications	15	4
Premature	1	4
Premature + death	2*	0
Premature + RDS	2	0
Premature + LBW	1	1
Premature + CHD	0	1
CHD (Term infant)	1	0
Meconium staining	0	1
Prolonged Hospitalization	0	1
Spontaneous Abortion	0	1

* - one death related to infection

RDS = respiratory distress syndrome; LBW = low birth weight;

CHD = congenital heart disease

Table does not include patients with abortion or lost to follow-up

plications. Of the two repaired without residua, one pregnancy was noted to be complicated, and one was not. Results in *Table 6* compare intrauterine growth of the fetus to gestational age and maternal heart disease type. These results show that the majority of infants, even premature infants, were not growth retarded.

There were eight mothers on medications during their pregnancy. The most common medications were digitalis and/or diuretics. Six of these mothers had complications related to heart disease during their pregnancy, including pulmonary edema, hypertension, and right and/or left ventricular failure. Fetal complications included premature births and a neonatal death. No direct correlation should be assumed between these complications and medication as the mothers receiving medication tended to be in the worse functional classifications.

Discussion

The risks of fetal complications, particularly prematurity, are increased in pregnancies occurring in women with heart disease. The various types of heart disease appear to have different outcomes, with congenital heart disease consistently having greater fetal complication rates than valvular heart disease. The outcome of pregnancy did not appear to be related to maternal repair status for women with acyanotic congenital heart disease.

Women with valvular lesions tended

TABLE 5
Maternal Complications Only as a Function of Type of
Heart Disease: Recent Pregnancies Only

	CHD-Cyanotic	CHD-Acyanotic	Valvular
No complications	2	11	10
Pulmonary Edema	0	0	2
RVF + LVF	1	0	0
Near Syncope	0	0	0
Increased arrhythmia	0	1	0
Infection	0	1	0
CHD = congenital heart	disease; RVF =	right ventricular	failure;
LVF = left ventricular f		**	

to have pregnancies complicated by maternal rather than fetal problems. In a "general" population of pregnant women, spontaneous abortion rates are reported to range from 10-20%.7 Spontaneous abortions plus stillborn birth rates in this study of women with a variety of heart diseaes are consistent with these "normal" figures. We noted an overall rate of premature births of 20%. When only women with congenital heart disease are considered the rate of prematurity was increased to 36%. These are compared to reported rates of 5-15% in the general population.8 Women with valvular heart disease had rates of premature delivery consistent with the normal population.

The study reported by Whittemore, which included some patients diagnosed as early as 1947, began in 1968 and continued until 1982. This study

included women with both repaired and unrepaired congenital heart disease and specifically investigated the appearance of congenital heart disease in the infants of these mothers. The study showed an increased percentage of live born infants in repaired mothers who were acyanotic during pregnancy. The authors noted a significant increase in cardiovascular complications during pregnancy in those mothers with a worse functional status. The premature rate was determined only for cyanotic mothers; however, in this group 21% of infants were premature and 50% had low birth weight. Infants in their follow-up had a 16% incidence of congenital heart disease.

Our results reveal a similar increase in complication rates in women with unrepaired acyanotic congenital heart disease. As with previous studies, we noted a significant increase in the frequency of fetal complications in mothers in functional class II or greater. Our study had a lower rate of congenital heart disease in the offspring (9%) than that reported by Whittemore, et al,2 but our available data and follow-up were not as extensive. In addition, Whittemore, et al noted a substantially increased risk of spontaneous abortions and stillbirths whereas our values were consistent with a "normal" population of pregnant women. Neonatal death in their study was 1.1%, and was 2.6% in our cohort.

We initially postulated that, due to

TABLE 6 Fetal Intrauterine Growth as a Function of Gestational Age and Type of Maternal Heart Disease

Percantile of Normal Growth Gestational Age

	>50	0 %	10-50%			
	≥37 wks	<37 wks	≥37 wks	< 37 wks	< 10%	
CHD	3	5	2	0	0	
Other	10	3	4	1	0	
CHD = mate	ernal congeni	tal heart di	sease			

the early years included in the previous study, alterations in fetal outcome might have occurred in recent years as a function of improved diagnosis and surgical therapy. The tabulated results appear to be very similar in many cases for both studies, with only a few slight differences. Apparently, there has been a fairly stable percentage of complications and outcome results throughout both time periods unaffected by changing medical technology.

Several practical clinical guidelines can be formulated for assessing the outlook of pregnancy complicated by maternal heart disease. Congenital heart disease is associated with a greater risk of fetal problems than valvular heart disease. Non-repaired acyanotic disease does not appear to have a worse prognosis, however, than repaired acyanotic disease. A worse functional classification before or during pregnancy is associated with an increased percentage and increased severity of fetal complications. Valvular heart disease is more likely to result in maternal complications.

Conclusion

This retrospective study confirms

the increased fetal and maternal complication rate seen in women with heart disease. The problem of increased risk for an infant will continue to be a consideration due to the increasing life span of patients with repaired congenital heart disease. Women with acyanotic congenital heart disease and good function who wish to become pregnant should be counseled that their own risk of complication during pregnancy is low but that they have an increased risk not only of having a child who also has congenital heart disease, but also of premature delivery. and while the eventual outcome of the premature born infant can be expected to be good, it may suffer increased morbidity and require extensive hospitalization. A basic clinical evaluation of a pregnant woman with heart disease needs to assess the type of heart disease, as well as maternal functional

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THEME: The Changing Face of Medicine

Maternal Mortality in Indiana: A Report of Maternal Deaths in 1985

The following is the annual report of the Indiana Maternal Mortality Study Committee. Six maternal deaths occurred in 1985. That year Indiana recorded 80,928 live births. This gives the state a maternal mortality rate of 7.4 deaths per 100,000 births for 1985.

The Committee met in open session at Ob-Gyn Grand Rounds at the Indiana University Hospital on June 11, 1986. The function of the Indiana Maternal Mortality Study Committee was reviewed and updated statistics were presented. Several of the 1985 death summaries were presented and discussed. Maternal mortalities involving pulmonary embolism and thrombocytopenic purpura were discussed in detail.

The Committee adjourned to the Student Union Building for a closed discussion of the six 1985 deaths. Each case was presented for discussion, establishment of diagnosis, and assignment with regard to preventability and responsibility.

Case #767 was a 26-year-old at 8-10 weeks gestation. Cause of death: drug overdose. Case #768 was a 27-year-old. G5,P3,AB1. Cause of death: pulmonary embolism. Two weeks postpartum. Case #769 was a 20-year-old, G2, PO, at 20 weeks gestation. Cause of death: thrombotic thrombocytopenic purpura.

Case #770 was a 27-year-old, G6,P4,AB2, at 10 weeks gestation. Cause of death: cerebral vascular accident. Hypertension. Case #771 was a 23-year-old, G2,P2, that was 15 days postpartum. Uncertain cause of death: inanition. Possible anorexia. Case #772 was a 17-year-old, G1,P1, seven days postpartum. Uncertain cause of death. Case #773 was a 15-year-old, G1,P1, at 38 weeks gestation. Cause of death: toxemia of pregnancy.

Maternal mortality is still with us. While the numbers are small the Committee feels that it is important to investigate and report these deaths for statistical and education purposes. Undoubtedly, there are many "near misses." According to our records 50-75% of these deaths are preventable or have preventable factors.

There were no 1985 deaths due to ruptured ectopic pregnancy. The report of the 1984¹ deaths included three cases of ruptured ectopic pregnancy. Early diagnosis of this condition is now possible with sensitive pregnancy tests and ultrasound.

According to several recent articles on maternal morality, ^{2.6} there appears to be a changing trend with regard to causes of death. The time honored causes of hemorrhage, infection, and toxemia have been replaced by embolism and toxemia. Deaths due to toxemia of pregnancy and pulmonary embolism have remained static during study periods, including our own Indiana experience. In 1985 one case of

pulmonary embolism and one case of toxemia were reported. Deaths due to toxemia may represent a low standard of prenatal care and hopefully can be improved upon. Deaths due to pulmonary embolism remain an enigma, probably because early recognition and prevention can be difficult. Perhaps prophylaxis to prevent pulmonary embolus should be considered in operative cases.

There is a continuing collaborative effort on the part of the American College of Obstetricians and Gynecologists to summarize maternal deaths by states and districts. This combined experience should provide more meaningful statistics to continue to curtail preventable maternal mortality.

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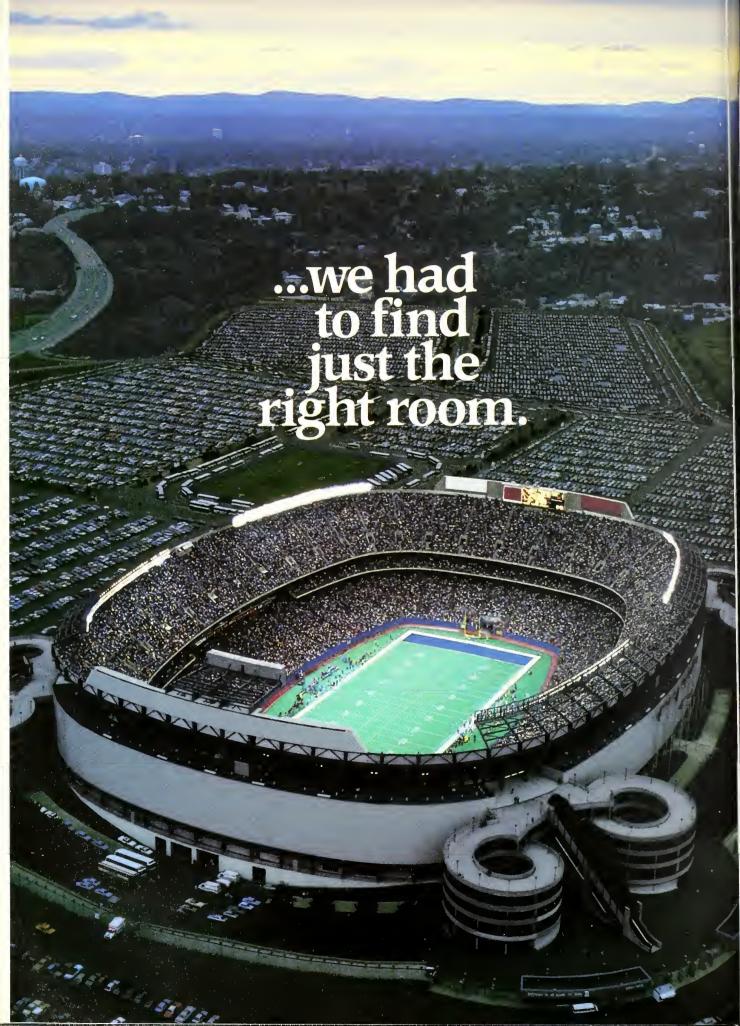
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This report was prepared by William D. Ragan, M.D., Professor, Ob-Gyn, Indiana University School of Medicine, and Chairman, Maternal Mortality Study Committee.

To show you how many hypertensives stayed on INDERAL LA PROPRANOLOL HCI)

after a major nationwide trial...





60,073 patients (90%) who started at INDERAL LA stayed on INDERAL LA.

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Because most patients on INDERAL LA (propranolol HCl) don't even know it's working.

A recent double-blind, placebo-controlled, crossover study in 138 hypertensive patients² revealed that INDERAL LA has a side effects profile unsurpassed by atenolol or metoprolol—which shows how well-tolerated once-daily INDERAL LA can be.

Sole therapy or concomitant therapy? Fifty-nine percent of the time, INDERAL LA stood on its own.

The patients in the nationwide compliance trial were no different from yours. Generally when the antihypertensive regimen is complicated, compliance may become a problem. So, the effectiveness of INDERAL LA as once-daily monotherapy is a big plus. Of the remaining hypertensives in the program, 36% were treated merely with the addition of a diuretic to INDERAL LA.

For the noncompliant patients in your practice, INDERAL LA may well be the answer.

Almost 20,000 of the patients in the nationwide compliance trial were identified as having been noncompliant with their previous antihypertensive therapy. Their physicians reported that 88% showed improved compliance when placed on once-daily INDERAL LA.

Control, comfort, and compliance



Like conventional INDERAL Tablets, INDERAL LA should not be used in the presence of congestive heart failure, sinus bradycardia, cardiogenic shock, heart block greater than first degree, and bronchial asthma

*After a 30-day trial with INDERAL LA, physicians reported that 90% of the patients would remain on INDERAL LA.

The one you know best keeps looking better



The one you know best keeps looking better

BRIEF - MMARY FORF ILL PRESCRIBING INFORMATION INTO PACKAGE CHOULAR I

INDERAL* LA mand of propriate of y droub unde (Long Acting Capsules)

DESCRIPTION. INDERAL. A is formulated to provide a scalamed release of propranoloi 1. so mode INDERAL LA is available as 60 mg. 80 mg. 1/0 mg. and 160 mg capsules.

CLINICAL PHARMACOLOGY. NDERAL is a remitte ective ibeta-adrene gic receptor

CLINICAL PHARMACOLOGY. NDERAL is a nature ective ibeta-adreneig circle epfort in king age in the second of the king age in the second control of the king age in the second control of the king age in the second control of the second control

INDERAL LA should not be considered a simple mg-turing substitute for conventional ambrant. Aird the blood leve's achieved do not match (are lower than) those of two to four impside a vidusing with the same dose. When changing to INDERAL LA from conventional propriance a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however such a hyperfension or anging where there is ittle correlation between plasma levels and clinical effect. INDERAL LA has been therapeutically equivalent to the same mg dose of conventional NDERAL as assessed by "4-hour effects on blood pressure and on 24-hour exercise reponses of heart rate systolic pressure and rate pressure product. INDERAL LA can provide infective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertensional iteriary be used a record used in combination with other antihypertensive agent particularly a thiazide diuretic. INDERAL LA is not indicated in the management of

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the

eagest ent of patients with ar gina be close. INDERAL LA is indicated for the prophylaxis of common migraine headache of propranolol in the treatment of a migraine attack that has started has not been

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic stenosis the stenosis especially for treatment of exertional or other stress-induced arguma is attrations and synlope INDERAL LA also improves exercise performance. The affectiveness of proprandor hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation.

CONTRAINDICATIONS. INDERAL 1. contraindicated in 1) cardiogenic shock 2) sinus

ONCE-DAILY

INDERAL **LA**

dyc ardia and greater than 1 rst-degree k 3) bror chial asthma 4) congestive heart faure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL

WARNINGS, CARDIAC FAILURE Sympa-WARNINGS, CARDIAC FAILURE Sympathet's stin slation may be a vital component supporting circulatory function in patients with congestive heart failure and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overtic ongestive heart failure if necessary they can be used with close follow-up in oatients with a history of failure who are well compensated and are receiving digitalis and diurefics. Beta-adrenergic blocking agents do not about the inotropic action of digitalis on heart muscle.

heart muscle. IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers car, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS there have been reports of exacerbation of angina and in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore when discontinuance of INDERAL is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against inferruption or cessation of therapy without the physicians advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to fullow the above advice in patients considered at risk of having occult atheroscilerotic heart disease who are given programolio for other indications.

Nonallergic Bronchospasm (eg. chronic bronchitis, emphysema) PATIENTS WITH BRONCHUSPASTIL, DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS INDERAL should be administered with caution since it may block bronchoditation

oroduced by endogenous and exogenous catecholamine stimulation of beta receptors MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior omajor surgery is controversial. It should be noted, however that the impaired ability of the fleart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and

or major surgery is controversian its motion be noted, however that the impaired ability of the reart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures. INDERAL (propranoloi HCI) like other beta blockers is a competitive inhibitor of beta-receptive agonists and its effects can be reversed by administration of such agents, e.g. dobutamine is isoprotereno. However, such patients may be subject to profracted severe hypotension bifficulty in starting and maintaining the heartbeat has also been reported with beta blockers. DIABETES AND HYPOGLYCEMIA. Beta blockers should be used with caution in diabetic cutients it a beta-folioxing agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranoloi may cause a delay in the recovery of blood glucose to normal levels. THYROTO XICOSIS. Beta blockade may mask certain clinical signs of hyperthyriodism. Including thyroid storm. Propranoloi may change thyroid function tests increasing Tajand reverse Tajand decreasing Taj

PRECAUTIONS. GENERAL Propranciol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranciol HCI) is not indicated for the treatment of

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should

be fold that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to return of increased intraocular pressure. CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe he

disease elevated serum transaminase alkaline phosphatase lactate dehydrogenase DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as respine should be closely observed if INDERAL is administered. The added catecholamine blocking action may produce an excessive reduction of resting sympathetic nervous active which may result in hypotension, marked bradycardia, vertigo syncopal attacks, or orthostal.

hypotension. Caution should be exercised when patients receiving a beta blocker are administered calcium-channel-blocking drug, especially intravenous verapamil, for both agents may dipress myocardial contractility or atmoventricular conduction. On rare occasions, the concortant intravenous use of a beta blocker and verapamilithas resulted in serious adverse reaction.

60 mg 80 mg 120 mg 160 mg

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol Ethanol slows the rate of absorption of propranolol Phenytoin phenobarbitone and rifampin accelerate propranolol clearance

Chlorpromazine when used concomitantly with propranolol results in increased plasm levels of both drugs

Antipyrine and Idoc aine have reduced clearance when used concomitantly wi

byroxine may result in a lower than expected T₂ concentration when used concomitant

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination an increasing blood levels

Increasing blood levels
Theophylline clearance is reduced when used concomitantly with propranolol
CARCINOGENESIS MUTAGENESIS IMPAIRMENT OF FERTILITY Long-term studies it
animals have been conducted to evaluate loxic effects and carcinogenic potential. In its
month studies in both rats and mice employing doses up to 150 mg/kg/day, there was n
evidence of significant drug-induced to-icity. There were no drug-related tumorigenic effect
at any of the dosage levels. Reproductive studies in animals did not show any impairment of
letrility that was attributable to the drug.
PREGNANCY. Pregnancy Category C. INDERAL has been shown to be embryotoxic in
animal studies at doses about 10 times greater than the maximum recommended human dose.
There are no adequate and well-controlled studies in pregnant women. INDERAL should be
used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
NURSING MOTHERS. INDERAL is excreted in human milk. Caution should be exercised
when INDERAL (propriance) HC I is administered to a nursing woman.
PEDIATRIC USE. Safety and effectiveness in children have not been established.

PEDIATRIC USE Safety and effectiveness in children have not been established

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely quired the withdrawal of therapy. Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypoter

paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type

Central Nervous System Light-headedness mental depression manifested by insomnia.

lassitude, weakness falique reversible mental depression progressing to catatonia, visual disturbances halfucinations vivid dreams, an acute reversible syndrome characterized by disorientation for time and place, short-term

*

LA 160

memory loss emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations fatigue, lethargy and vivid dreams appear dose related Gastrointestinal Nausea, vomiting, epigas-

tric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis

Allergic Pharyngitis and agranulocytosis, erythematous rash, lever combined with aching and sore throat, laryngospasm and respira-

Hematologic Agranulocytosis nonthrombocytopenic purpura thrombocytopenic purpura Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported

Miscellaneous Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence

and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL Tablets to INDERAL LA Capsules care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg-for-mg substitute for INDERAL INDERAL LA has different kinetics and produces lower blood levels. Retiration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval. HYPERTENSION — Dosage must be individualized. The usual initial dosage is 80 mg INDERAL LA once daily whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood-pressure control is achieved the usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—Dosage must be individualized. Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily in angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

Ittreatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

WARNINGS)
MIGRAINE — Dosage must be individualized. The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four tosis weeks after reaching the maximal dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several

weeks
HYPERTROPHIC SUBAORTIC STENOSIS — 80-160 mg INDERAL LA once daily
PEDIATRIC DOSAGE — At this time the data on the use of the drug in this age group are too
limited to permit adequate directions for use

*The appearance of these capsules is a registered trademark of Ayerst Laboratories

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Continuity of Care and Outcome in a Family Practice

RICHARD J. McALPINE, Ph.D., M.D. Urbana, Ind.

"BIG THINGS CAN BE SEEN WITHOUT MAGNIFICATION. There are two ways of detecting something that nobody else can see; one is to aim at the finest detail . . . ; the second is to look at things from a new angle . . ." Hans Selye!

URRENTLY, THE MEDICAL profession is responding with progressively increasing frequency by joining, participating in, or otherwise endorsing changes in the health care system, which, on the one hand correct certain perceived problems in the manner in which health care is delivered, but which, on the other hand either

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Acknowledgments: This study was initiated while the author was Associate Professor of Family Medicine, Wayne State University School of Medicine, Detroit, Mich., 1974 76. Supported in part by a Dean's Of fice Grant-in-Aid. Publication supported in part by the Indiana Medical Foundation. The author gratefully acknowledges the skill of medical photographer David Jaynes and medical illustrator Philip Wilson, Indianapolis, for the graphic and tabular materials.

Correspondence: Richard J. McAlpine, Ph.D., M.D., Urbana Medical Center, P.O. Box 7, Urbana, Ind. 46990. Abstract

This study utilizes the longitudinal dimension of health care continuity to calculate the frequency of acute myocardial infarctions and death which occurred in two population cohorts during a 2.66 year period of practice (1971-1974) in a mid-Atlantic practice setting. These outcomes in a provider system cohort that received defined care as intercritical health maximization (ICHM) for which continuity of care (COC) was documented are compared with similarly calculated outcomes for a community based (control) cohort that received either no care at

all or care that was available from other medical and non-medical resources in the locale of study. The age and sex adjusted provider system experience rates for Full Risk and Limited Risk myocardial infarctions and for death, expressed as number of cases per 1.000 years of treatment experience, were 8.7, 0.0, and 4.7, respectively, compared to community based experience rates for these events of 10.9, 5.9 and 13.1, respectively. Various biases in the study are discussed with the conclusion that COC and ICHM have an impact on both morbidity and mortality.

directly or indirectly interfere with the continuity of care (COC) that the targeted population receives. Prime examples of this trend include the "company physician" concept in industry, the "preferred care" program in the private insurance sector, the "participating provider" program of the Medicare system, and the many prepaid health care plans which are being organized as HMOs and PPOs.

In addition, a number of physician directed innovations in the health care delivery process that result from competition for the health care dollar, including the increasingly popular free standing surgical and emergency care facilities, also disrupt COC. Similarly, increasing competition by hospitals for patients has led to expanded outpatient treatment clinics and a variety of programs that target specific segments of the population, including cardiac rehabilitation, oncology, pulmonary medicine, urology, substance abuse, obesity, and executive and sports physical examinations. The value of these specifically oriented programs is beyond question, although they often fail to promote continuity of care with the primary care physician and result inadvertently in greater discontinuity of care for the health care consumer.

At the community level a variety of programs offer an unparalleled opportunity for the health care seeking public to enhance and augment its self care capabilities. Such programs include hypertension screening, blood chemistry profiling, weight reduction regimens, and exercise activities. Whereas such programs may not be questioned as to the purity of their intent, their ultimate impact on health care outcome may be other than anticipated, particularly if they engender reduced physician contact and involvement with the patient population.

The present study has been undertaken to review the subject of COC and to present data on the relationship between the longitudinal dimension of continuity and selected outcomes in a family practice.

Review of Literature

Extensive recently published reviews of the COC literature^{2,3} are in general agreement that COC has infrequently been documented to have any negative effects on outcome, while it usually improves patient satisfaction, improves appointment and medication compliance, and provides increased disclosure of behavioral problems in pediatric practices.

Limitations to the interpretation of many published studies because of methodological problems have been pointed out, and more recently this objection has been circumvented by a double blind, randomized study design such as was utilized to investigate outpatient medical care in elderly men. This well conducted study confirmed that greater provider continuity improved the subjective outcome of patient satisfaction and also the objective outcome of fewer emergent prolonged hospitalizations.

However, other more recent studies⁵ have failed to demonstrate any beneficial effect of provider continuity on either patient satisfaction or the complication rate in a sample of 61 pregnant patients in a family practice residency setting. It is, therefore, not surprising that one author² states that "no case can presently be made for striving for personal care in all situations in general practice" and that he "has found no study that confirms a link between personal continuity and improved morbidity or mortality."

By contrast, however, limited data from the prospective medicine literature⁶ suggests that the onset of acute cerebro-vascular events may be delayed, if not actually prevented, through a process identified by its author as intercritical health maximization or ICHM. Inasmuch as documen tation of the longitudinal dimension of healthcare is an integral characteristic of ICHM, studies relating to other outcomes in a population for which COC and ICHM were emphasized have been undertaken to identify a link between COC and morbidity or mortality.

TABLE 1

AGE SEX DISTRIBUTION, COMMUNITY BASED POPULATION IN LOCALE OF PRACTICE, 1970 CENSUS

AGE GROUP	MALE		FEMALE		COMBINED	
AGE GROOF	No.	% Total	No.	%Total	No.	% Tota
0 39	2246	59.4	2296	56.5	4542	57.9
40 64	1054	27.9	1145	28.2	2199	28.0
65+	482	12.7	622	15.3	1104	14.1
TOTAL	3782	100.0	4063	100.0	7845	100.0
%Total	48.2		51.8		100.0	

TABLE 2

AGE SEX DISTRIBUTION, WID ATLANTIC PROVIDER STYSEM POPULATION, 1971 1974 (2.66 yr.)

AGE GROUP	MALE		FEN	1ALE	COMBINED		
AGE GROUP	No.	Total	No.	Total	No.	Total	
0 39	2 3 7	63.4	381	65.4	618	64.6	
40 64	88	23.5	138	23.7	226	23.6	
65+	49	13.1	64	10.9	113	11.8	
TOTAL	374	100.0	583	100.0	957	100.0	
: Total	39.1		60.9		100.0		

Present Study Design

Methodological Phase. The longitu dinal dimension of health care being delivered to a practice population has been measured through the application of prospective longitudinality criteria as have been described elsewhere.7 This methodology has provided defacto age and sex specific denominator values suitable for use in experience rate calculations.6 In this same study the author has also described numerator criteria that either lend specificity (medical descriptive criteria) or impart prospective significance (prospective assessment criteria) to studies in which they are applied.

The Population Studied. The study

population herewith reported is the same as that from which data have been drawn for previous publica tions. 6.7 It comprised the white residents of a fringe Appalachian county in one of the middle Atlantic states during the period 1971 to 1974 as revealed by the 1970 census* in Table 1. During this period of 2.66 years one cohort of the county population was identified separately by virtue of registration for care in the author's then active family practice located in the county seat of the subject county. This cohort population (Table 2), hereafter referred to as the provider system population, constituted 12.2% of the total county population in Table

TABLE 3

AGE SEX DISTRIBUTION OF ACCRUED LONGTUDINALITY (PERSON YEARS), MID ATLANTIC PROVIDER SYSTEM POPULATION, 1971–1974 (2.66 yr.)

4.65, 65,0115	MALE		`FEM	ALE	COMBINED		
AGE GROUP	No.	&Total	No.	%Total	No.	%Total	
0 39	276	58.6	455	60.2	731	59.60	
40 64	138	29.3	210	27.8	348	28.4	
65+	57	12.1	91	12.0	148	12.0	
TOTAL	471	100.0	756	100.0	1227	100.0	
%Total	38.4		61.6		100.0		

1 and 65% of the author's total active practice population at the time. The 87.8% of the county population that did not register for care in the provider system constituted a second and much larger cohort, hereafter referred to as the community based or control population. The care this population received varied from no care at all to that which was available from all other medical and non-medical resources in the locale of study. Non-whites, who constituted 3.7% of the area population, were excluded from both cohorts. Tables 1 and 2 revealed that the provider system population contained a slightly higher percentage of women below age 40 than the community based population.

Clinical Phase. Intercritical health maximization (ICHM) as a method of practice6 has gradually and empirically evolved in the author's experience over the past 20 years and is considered as important to the interest of prospective health care delivery as the immediate care necessary for symptomatic remission during the acute event. In addition to exercising standard diagnostic and therapeutic protocol regarding the care of the provider system population, systematic effort has been made in the provision of ICHM to implement all of its various components as have been described elsewhere.6 It should be noted that this process augments doctor-patient interaction in such a way as to maximize all aspects of COC as originally described by Hennen⁹ and later supplemented by Rogers and Curtis.¹⁰

Experimental Phase. The study design is one in which outcomes in one historical cohort of the county population (the provider system) that was exposed to maximal COC as ICHM has been compared to the same outcomes in another cohort of the population (the community based population) not known to have been so exposed. The comparison has been accomplished by calculating the provider system experience rate (PSR) and the community based rate (CBR) for acute myocardial infarctions and for death in the two population cohorts according to the previously published formula.6 Age and sex specific denominator data utilized for PSR calculations are based upon the longitudinal dimension of health care experience accrued with the provider system population as summarized in Table 3. Denominator values for CBR calculations have been derived by simple calculation from the data in Tables 1 and 3. Numerator events were identified by retrospective review of provider system records, of records from the local hospital, and from county health department death certificate data in the locale of study. The uncertainties of the latter data source have already been addressed.11

Results of Study

Outcome data for acute myocardial infarction and death are summarized in *Tables 4 and 5*, respectively, by source of health care experience, prospective assessment category, and other variables appropriate for each condition.

Acute Myocardial Infarction. The 143 cases that occurred during the 2.66 year period of study were identified according to the descriptive medical criteria listed in Figure 1 which reflect the "state of the art" for the diagnosis of the acute MI in the locale of study during the 1971-74 period of data collection. Needless to say, the criteria required at that time to identify the patient with an acute MI have been rendered obsolete by subsequent advances, including cardiac iso-enzymes, echocardiography, and radio-nucleide scanning. However, the criteria are presented in detail to exemplify the previously referenced "standard diagnostic protocol" utilized during the period of data collection.

Following identification, all MI cases were distributed into two sub-sets (Table 4) namely, Full Risk (Category 1) and Limited Risk (Category 2) according to the PMH (past medical history) prospective assessment numerator criterion.6 Full Risk (Category 1) events included all numerator cases having a known previous infarction or atherosclerotic heart disease. Limited Risk (Category 2) events were those for whom a prior history of heart disease could not be documented. Distribution of all cases either to community based or provider system experience was then accomplished according to the SOR (status on registration) prospective assessment numerator criterion.6

Conclusions are limited regarding the Full Risk Category 1 events because of the small number of cases in the different age/sex groups in the provider system. However, the all agesex adjusted PSR of 8.7 for Category 1 events and the absence of Category 2 limited risk MI events through 496

TABLE 4

ACUTE MYOCARDIAL INFARCTIONS AND EXPERIENCE RATES ** BY PROSPECTIVE ASSESSMENT CATEGORY, HEALTH CARE SOURCE, AGE, AND SEX, MID-ATLANTIC LOCALE, 2.66 YR., 1971-1974

	FULL RISK (CATEGORY 1)						ITED RISK (CATEGOR	Y 2)	
N	AGE	COMMUN	IITY BASE	PROVID	ER SYSTEM	COMMUN	NITY BASE	PROVIDI	PROVIDER SYSTEM	
0.	GROUP	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
E	40-64	30	11	2	0	18	7	0	0	
E	65+	32	17	0	2	17	7	0	0	
T S	TOTAL	62	28	2	2	35	14	0	0	
R	40-64	11.3	3.9	14.5	0	6.8	2.5	0	0	
A	65 +	26.1	10.9	0	22.0	13.9	4.5	0	0	
E	All Ages	15.9	6.4	10.3	6.6	8.9	3.2	0	0	
S	Age Adj	-	-	9.9	7.7	-	-	0	0	
	All Age Sex	10	. 9	8	8.1		5.9	0		
	Age-Sex Adjusted*		-	8.7			-		0	
		С	BR	F	PSR		CBR	Р	SR	

^{*}TO COUNTY POPULATION, 1970 CENSUS

person years of accrued health care experience (calculated from $Table\ 3$) with patients older than 40 years of age in the provider system during the 2.66 year period of practice (PSR = 0) is not incompatible with a delay in onset of MI in the provider system population.

Death Events. The 262 numerator cases included all death events due to natural causes and to self inflicted injury, with the exclusion of neonatal deaths in the first week of life and traumatic violent deaths not self inflicted (auto-cide, farm accidents, etc.). As before, all numerator cases without prior registration in the provider system population for reasons other than death were directly assigned to community based population experience according to the SOR prospec-

tive assessment numerator criterion. The lower PSRs compared to CBRs is again not incompatible with a delay in onset of death events in the provider system population during the 2.66 year period of study.

Discussion

When considered from the perspective of Ibrahim's "Rules of Evidence," the presently reported study may be characterized as somewhere between a time trend or ecological analysis having only "suggestive" implications and a historical cohort study having "highly suggestive" implications as to a cause and effect relationship between COC and ICHM and the observed outcomes. Certainly, the present study is observational and evaluative, if not quasi-

experimental and hypothesis testing. Selection and volunteer bias relating to the practice population, author bias regarding the worthiness of ICHM and the prospective approach in practice, and other confounding biases, such as the empirical nature of longitudinality measurement based upon the prospective health care interest are readily apparent. Furthermore, the small size and limited duration of the study demand cautious interpretation.

Nevertheless, the present study is herewith described not only because it exemplifies a methodology not heretofore published by others in family practice research, but also because it suggests a cause-effect relationship between COC and/or ICHM in reducing PSRs for the outcomes here-

^{**}NUMBER MYOCARDIAL INFARCTIONS PER 1000 PERSON YR.

TABLE 5

DEATH EVENTS AND EXPERIENCE RATES ** BY HEALTH CARE SOURCE, AGE, AND SEX, MID-ATLANTIC LOCALE, 1971-1974 (2.66 yr.)

	CC	DMMUNITY	BASE PO	PULATION	PROVID	ER SYSTE	M POPULA	TION
AGE	M	4 LE		FEMALE	MAL	MALE		MALE
GROUP	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE
0-39	12	2.1	7	1.2	1	3.6	0	0
40-64	40	15.0	14	4.9	0	0	0	0
65+	106	86.5	78	49.9	1	17.5	3	33.0
ALL AGES	158	16.5	99	9.8	2	4.2	3	4.0
AGE ADJUSTED*				-	4	. 4	5	5.1
COMBINED SEX	13.1					L	1.1	
SEX ADJUSTED*			-			L	1.7	

- * TO COUNTY POPULATION, 1970 CENSUS
- ** DEATHS PER 1000 PERSON YEARS.

with and heretofore reported. Thus, by looking at practice outcome from Selye's mew angle, the present data do, in fact, suggest a link between COC and ICHM and both morbidity and mortality. The conclusion that COC of itself may contribute to a delay in onset, if not an actual reduction, in future acute illness episodes is further supported by the previously cited well designed experimental study on continuity of outpatient medical care in elderly men in which COC resulted in fewer emergent prolonged hospitalizations.

The present studies suggest that constancy of the therapeutic environment may be no less important to a patient population than was enunciated for the individual patient many years ago by Claude Bernard, 13 to wit: "La fixite du milieu interieur est la condicion de la vie libre." It is incredible that a profession whose therapeutic achievements have been based upon the foregoing words of Bernard and on

CRITERIA FOR DIAGNOSIS OF MYOCARDIAL INFARCTION

1. Sudden Onset

2. Abnormal Electrocardiogram

- a. Acute current of injury and/or Q waves with or without enzyme changes.
- b. Changes compatible with coronary heart disease plus enzyme criteria below.
- 3. Enzyme Abnormalities
 - a. SGOT greater than twice normal plus EKG criteria.
 - b. CPK greater than 2.5 times normal and not more than one I.M. injection prior to blood sample plus 2b above.
- 4. Sudden Death
 - a. With EKG evidence acute current of injury.
 - b. History CHD in past.
 - Classical acute clinical history in absence of supporting laboratory evidence.

FIGURE 1

its subsequent evolution by Cannon¹³ as the principle of homeostasis would be so quick to abandon these same principles in regard to COC in the therapeutic environment.

Even if COC and ICHM should ultimately be shown to improve morbidity and mortality on a prospective basis, their tacit acceptance both by the patient population and by the medical profession as a process to be emphasized in the ambulatory care setting of office practice will be far from assured. In fact, many factors already in place on the scene of fee-for-service ambulatory care medicine mitigate against their prompt adoption. A few of these factors include the desire of the public for episodic care, the reticence of the public to keep appointments necessary to document a return of wellness following a previous critical event, and the hesitancy of the medical profession to institute additional diagnostic or therapeutic procedures for suspected submarginal physical recovery of a patient who has experienced total subjective remission of symptoms.

In fact, recognition of the problematic acceptance of ICHM and preventive health care was documented as early as the 18th Century during the age of Voltaire (1715-1789) by Durant¹⁴ as follows: "A few doctors dared to

undermine their incomes by spreading a knowledge of preventative medicine. Dr. John Arbuthnot of London.... anticipated later complaints in a treatise, The Cost of Preserving Health (1744)." It is probable, therefore, that a mutually acceptable contract between patient and provider regarding specific health care "wants" and "needs" will ultimately govern this aspect of the patient care process.

Ultimately, the "bottom-line" in this joint endeavor will undoubtedly incorporate the cost savings that may be realized through careful ICHM and COC as part of a wellness approach in the setting of office practice. The task at hand is immense, and may even require that "new type of general practitioner," whose characteristics have already been described in the literature. 15

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Emergency Evaluation of Abdominal Aortic Aneurysms

MALCOLM A. STEELE, M.D. MICHAEL C. DALSING, M.D. Indianapolis

"The Emergency Medicine
Physician Must Have
a High Index of
Suspicion for the
Presence of an Abdominal
Aortic Aneurysm in
Any Patient Over
Age 50 with Unexplained
Hypotension, and in
Stable Patients with
Back, Abdominal,
Perineal or Inguinal
Pain..."

fact that ruptured aneurysms can present atypically and can simulate many other conditions. These include small bowel obstruction, diverticulitis, ureteral stone, femoral neuropathy, inguinal hernia, ruptured lumbar disc, congestive heart failure, and atypical angina. In some cases, syncope occurs upon rupture, with partial hemodynamic recovery then taking place.

BDOMINAL AORTIC aneurysms

occur relatively frequently,

especially in men over age 50.

Their prevalence and yearly incidence

of rupture is increasing, as is their importance to the emergency medicine

physician. Diagnosing ruptured ab-

dominal aortic aneurysms is notorious-

ly difficult for both the clinician and the

radiologist,23 yet proper emergency

department management is crucial to

aneurysm repair is less than 2%, pa-

tients with ruptured aneurysms suffer

a 30-60% death rate. Delays in getting

the patient to surgery lead to even

higher mortality rates.⁵ The task of the

emergency medicine physician is to

recognize a case of ruptured aneurysm

among the many patients complaining

of back or abdominal pain, and to ex-

pedite his transfer to the operating

make a precise diagnosis, he does not

have the luxury of waiting for test

results when faced with an unstable pa-

tient. Diagnosis is complicated by the

Although the physician would like to

While the mortality rate for elective

the patient's survival.

room.

Thus, the physician may suspect a transient ischemic attack or cardiac arrhythmia.

Most patients whose aneurysms rupture intraperitoneally die before reaching the hospital.⁵ Those with retroperitoneal rupture do not succumb as rapidly, since the periaortic tissues tamponade the bleeding. Of patients arriving alive, 72% had retroperitoneal and 23% intraperitoneal ruptures; 7/129 had aortocaval fistulas and 3/129 had aortoenteric fistulas. 11 Because of this retroperitoneal containment, Szilagvi⁶ notes that anuerysm pain is somatic, resulting from pressure on sensory nerves in the retroperitoneum. The patient complains of constant pain which is unrelated to posture, and is located in the mid-abdomen, pelvis, or lumbar areas and can be referred to the thigh, testicle, or perineum. The abdominal component of pain is most often on the left, according to Mannick.10 The history is, therefore, often nonspecific but suggestive.

There are pitfalls in the physical examination, as well, in patients with abdominal aortic aneurysms. The aneurysm may not even be palpable. Except in the very thin patient, it must be over 5 cm before it can be felt. Distinctly palpable margins are often lost after an aneurysm ruptures, causing inaccuracy in the examination. 10

In the emergency situation, the size of a known aneurysm is not helpful in deciding if rupture has occurred. Although the risk of rupture increases with the size of the aneurysm, even small ones (less than 5 cm) can rupture. As a consequence of the difficulties in recognizing abdominal aortic catastrophes, as many as 20% of patients are initially admitted with other diagnoses. The most important factor in making the correct diagnosis is to consider it—even when the clinical presentation may be atypical for ruptured aneurysm.

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To complicate matters further, other diverse conditions may mimic the symptoms and signs of ruptured abdominal aortic aneurysms. The patient with an intact abdominal aneurysm, and a rupture-like pain pattern caused by some other condition, is said to have the pseudorupture syndrome. 12 Clinical features may include the classic "ruptured aneurysm" triad of shock, pain, and a pulsatile abdominal mass. Its etiologies may include mesenteric artery occlusion, acute myocardial infarction, peritoneal carcinomatosis, ketoacidosis, renal colic, diverticulitis, appendicitis, peptic ulcer disease, pancreatitis, cholecyctitis, pancreatic abscess, and mesenteric lymphomas and sarcomas. 12.13.14.15 It is desirable to avoid surgery, if possible, for most pseudorupture patients. An 18% mortality rate for emergency operations on these patients has been reported. This entity comprises between 4%12 and 41% of those evaluated for possible ruptured aneurysms.

The management of patients with a suspected ruptured aneurysm hinges on their hemodynamic status on arrival in the ER. Unstable patients with systolic BP less than 100, falling blood pressure, or hematocrit below 37%, require the most aggressive approach. A previous episode of hypotension should also suggest the need for emergent operation. Airway and ventilation are stabilized, two large IVs are inserted, and crystalloid infused to maintain systolic BP of 90-100 while the surgery team is notified. Consideration is given to the use of MAST trousers,16 administration of fresh frozen plasma,11 type-specific or O-negative uncrossmatched blood,5 a Foley catheter, and a central venous pressure line, though these interventions should not delay the patient's transfer to the operating room.

Delays in diagnosis and anesthesia induction of patients with ruptured aneurysms are known to increase mortality rates drastically; pre-op delay accounted for 45% of the deaths in one study.⁵

The non-hypotensive patient with a suspected abdominal aortic catastrophe must be regarded with eaution because a normal blood pressure is often a transient finding, and shock may suddenly develop.5.17 It is acceptable to do a diagnostic evaluation on these patients including emergency CT scan of the abdomen (with and without contrast), while constantly observing for clinical deterioration. In the past, arteriography was used extensively, but it is difficult to interpret and may miss aortic rupture entirely or underestimate size or thrombus formation.18 Ultrasonography is not an acceptable alternative. Although it can accurately demonstrate the size of an aneurysm and the presence of thrombus, ileus (a condition found commonly with ruptured aneurysms) can interfere with the exam.14

Computed tomography has been shown useful in determining the location and size of the aneurysm, the presence of thrombus, structural abnormalities in the surrounding tissues. tumor masses, abscesses, and hematomas.14 In a series of 47 non-hypotensive patients with abdominal aortic aneurysms and abdominal or back pain, CT scans allowed 13% to avoid surgery and 47% to have semi-elective rather than emergency surgery.20 CT diagnosis of aortic rupture is made when an ill-defined periaortic soft tissue density, or contrast extravasation outside the aorta, is seen. Signs of an unstable (likely to rupture) aortic aneurysm include elliptic cross sectional shape, focal discontinuity of the calcified rim, greater than 1 cm increase in size within six months, focal transverse outpouching (bubble) of the aortic wall, or anterior or lateral psoas muscle obliteration.20

However, CT scans can sometimes be misleading. In one case report, free fluid (ascites) was misinterpreted as blood, and surgery on an intact aneurysm resulted. 12 Johnson 20 describes the false-positive CT diagnosis of rupture caused by illdefined metastatic tumor encasing the aorta.

Despite diagnostic uncertainty, the clinical approach to patients with suspected ruptured aneurysms is standard. In the hemodynamically unstable patient, resuscitation and immediate surgical exploration are indicated. In the hemodynamically stable patient with a pulsatile abdominal mass and a worrisome pain pattern, two large IVs should be started in case of rapid deterioration, and a CT scan obtained immediately. This approach should help to avoid emergency surgery on most cases of intact aneurysms, while avoiding lethal delays in those with rupture. In Johnson's series, none of the 47 stable patients with aneurysms suffered a rupture during the time required for a CT scan.20

The emergency medicine physician must have a high index of suspicion for the presence of an abdominal aortic aneurysm, and consider the diagnosis in any patient over age 50 with unexplained hypotension, and in stable patients with back, abdominal, perineal, or inguinal pain.

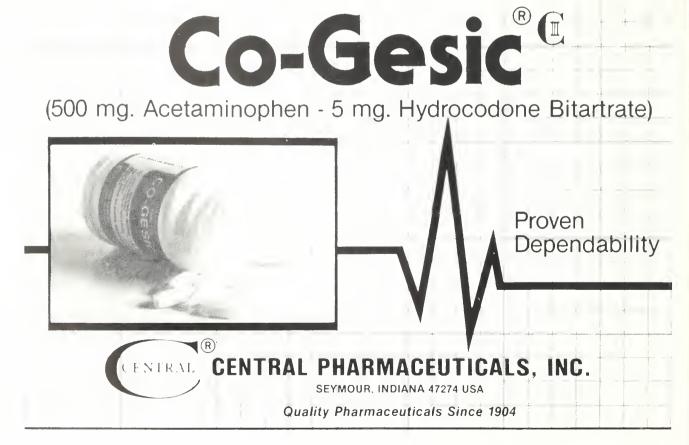
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Reader Comments on Article Concerning Management of Renal and Ureteral Calculi

Letter to the Editor

The article entitled, "Renal and Ureteral Calculi: Current Management" (Scott JW, Lingeman JE: Invarian Medicine, 80(5):450-455, May 1987), white covering ESWL and endourology elegantly, omits discussion of dissolution therapies for struvite, uric acid, matrix, and cystine calculi. There have been significant developments.

Since Stamev's demonstration in 1983 that post-operative hemiacidrin irrigation could reduce the recurrence rate of struvite calculi by a factor of ten, dissolution therapy has become the standard of care for struvite in this region. Stamey's paper was critical in gaining permission from the pharmacy committees of Memorial, St Joseph-So. Bend, St. Joseph-Mishawaka and Holv Cross-Parkview of Plymouth, to use hemiacidrin in the upper tracts. Thus, percutaneous nephrostomy with debulking where necessary, followed by dissolution through tubes of proper diameter and with proper safe-guards, may be acceptable care without the ad dition of ESWL.

Let us not forget also that struvite calculi may dissolve in the rare case with antibiotic therapy alone. Diclox-acillin caused the dissolution of "multiple left renal calcul" caused by staph epidermidis, a urea splitter. Rodman and others achieved "partial dissolution of struvite calculus with oral acetohydroxamic acid, a urease inhibitor.

Similarly, the elegant method of Kursh and Resniek of dissolving uric acid stones by intravenous 1/6 N sodium lactate must not be forgotten.⁵ I have used it. It works beautifully. It is confirmed in the literature.⁵

The radiolucent matrix concretions characteristic of diabetics do not respond to ESWL but dissolve well in trypsin. The reference is in German; a translation is available on request.

ESWL, we now know via the fugitive literature, is only effective in 50% of patients with cystine concretions. Dissolution therapy with Nacetyl-cystine via a percutaneous nephrostomy works in 100% of the patients. So why shock cystine except to facilitate the dissolution of very large concretions?

The usual objection to all the dissolution therapies is that costs are forbid ding because it is assumed that all dissolution must be done in-hospital. The answer is the growing importance of home care. In this region, intravenous antibiotics via the visiting nurse service is not unusual. The AIDS epidemic in the San Francisco area has been handled by a vast expansion of the idea of what can be done in a home care setting. There is no reason to think that any of the therapies mentioned above, if intelligent protocols are set up, could not be done by the various home care services eagerly competing for business.

One must also consider for this group of stones the growing suspicion that ESWL causes hypertension in some patients. At one-year follow-up 24% of patients had an increase in their diastolic blood pressure. 8.2% required pharmacologic therapy. 10

These facts have policy implications. Taken together, struvite, uric acid, matrix and cystine constitute about one-third of all concretions needing an operation as seen in Scott and Lingeman's Figure #1. Clearly, they can be shocked. On the other hand, if as the references above suggest, they should not be shocked on medical grounds, then the economics of a \$2 million extracorporeal lithotripter change considerably. The less expensive technology of intravenous or percutaneous nephrostomy dissolution, which only requires ultrasound and a 'C' arm (used jointly by orthopedics), can be seen as suitable for fully onethird of urinary concretions. This is within the capabilities of most community hospitals with adequate cognitive resources. I have set up such a program at Holy Cross-Parkview in Plymouth, for example, It certainly should be considered by public sector hospitals such as the V.A. system that deal with a higher proportion of chronic disease patients and therefore more struvite.

Our economy favors capital-intensive rather than labor-intensive procedures. That may be the reason for the resistance to the methods cited above. The resistance may diminish as gate-keepers of HMOs and PPOs scrutinize value received from ESWL and endourology alone unaccompanied by dissolution technology. As Stanley Reiser has written in Medicine and the Reign of Technology:

"Today's physician must rebel. He can use his strongest weapon, refusal

to accept bondage to any one technique, no matter how useful it may be in a particular instance. He must regard them all with detachment, as mere tools, to be chosen as necessary for a particular task. He must accept the patient as a human being, and regain and reassert his faith in his own medical judgment."

Nowhere is this more true than in the case of struvite, uric acid, matrix, or cystine concretions in the urinary tract.—Anthony H. Horan, M.D., South Bend, Ind.

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The Authors Reply

Medical therapy to attempt dissolution of uric acid or cystine calculi should always be attempted prior to an attempt to remove calculi with any of the new stone techniques. However, dissolution therapy via irrigating techniques are not first-line procedures for the treatment of any calculi in our opinion. Irrigation through percutaneous nephrostomies to dissolve struvite, matrix, uric acid, and cystine calculi is time-consuming, expensive, and associated with significant morbidity. Concern about the safety of irrigation of the upper urinary tract has led the FDA to restrict the use of Renacidin for this purpose and we do not feel that this technique is sufficiently safe to be applied on an outpa-

Stamey's article on surgery plus

Renacidin for the treatment of struvite calculi excluded all high-risk patients (neurogenic bladders, urinary diversion, etc.) and therefore is not reflective of the typical population of patients afflicted with these calculi. Therefore, his results should not be generalized. The dissolution of struvite with chronic antibiotic therapy or acetohydroxamic acid is sufficiently rare to make the use of this approach as primary therapy unjustifiable.

Dr. Horan unfairly implies that the treatment of upper urinary tract calculi with ESWL is more expensive than alternative techniques. This is not the case. In fact, ESWL is less expensive than open surgery or percutaneous procedures. The reason for this is that the lithotripter is a very fast and efficient process relative to other techniques, thus allowing a high throughput of patients with a low cost per pro-

cedure. It is the cost of procedure, of course, that is relevant and we would expect that any techniques utilizing irrigation would substantially elevate costs to the patient.

We would like to emphasize our opinion that dissolution therapy is not primary therapy for any calculi in the upper urinary tract at this time.—James E. Lingeman, M.D. and John W. Scott, M.D., Indianapolis

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Medicine's Lighter Moments

THE HEART SURGEON

TED L. GRISELL, M.D. Indianapolis

ANY OF YOU will recall the tremendous excitement with which the public received the news from South Africa that Dr. Christian Barnard had performed the world's first heart transplant on a human being.

Dr. Barnard was partially trained in the United States, and I understand had some training under Dr. Shumway at Stanford University in California, where probably more cardiac transplant operations have been performed than in any place in the world.

It fell to the luck of the draw, so to speak, that Dr. Barnard was able to perform the first transplant of a human heart. Of course, the procedure was based on the medical knowledge of chemical and medical management that prevented the rejection of foreign tissue in the human body.

tissue in the human body.

A few months after this momentous

A few months after this momentous procedure, Dr. Barnard was on the program at the Pan-Pacific Surgical Association meeting in Honolulu. He was to pritique a paper to be presented by an Indiana University graduate who had devoted his career to the study of

Copyright 1987 by Ted L. Grisell, M.D., 5211 Brendonridge Road, Indianapolis, Ind. 46226 April September for Point East 301, 3801 S. Attantic Ave., N. w. Smyrna Beach, Fla. 32069. October March.

tissue rejection and the use of drugs to prevent such life-threatening episodes.

Dr. Barnard's critique was so knowledgeable, interesting and well received that the audience stood and applauded when he completed his address—to my knowledge, the first time a standing ovation has ever happened at a medical meeting.

Shortly after the meeting, I found myself sitting with Mr. Ian Smith of Sydney, Australia, who is a surgeon in his own right. (Most of you probably realize that surgeons in England and Australia are addressed by the title "Mister.")

During our conversation, Mr. Smith intimated that Christian Barnard loved the game of golf. He and Dr. Barnard had been roommates and friends during their medical training. Since Ian and I were planning to play at the Wailai Country Club golf course that afternoon, we decided to invite Dr. Barnard to join us.

He accepted readily and we made plans to meet at my hotel at 12:45 in preparation to have a tee-time of 1:30.

About five minutes before I was ready to leave my room to go to the country club, the phone rang. "I say, Grisell there?" Dr. Barnard asked in his delightful South African English accent. "Affirmative," I replied.

"I wish to tell you that when I reached my hotel after our meeting, I found that the Honolulu Women's Society was expecting me to give them an address at their noon luncheon; the lobby of the hotel is loaded with delightful and attractive women and, as you well know, I certainly am partial to the feminine sex. I feel I must give up the golf game and accept the

invitation. Please forgive me, but we'll take a raincheck and I'll try to play with you at some other occasion."

Mr. Smith and I, of course, agreed that Dr. Barnard, already well known in the lurid news print circles as quite a womanizer, could not pass up this opportunity. The golf date was therefore cancelled.

Seven or eight years later, while visiting Indianapolis, my home, Dr. Barnard called to say he would like to play the golf game he had cancelled previously. Unfortunately, he called in January at a time when the ground was covered with snow. We never did get to play golf together.

However, I was in South Africa when Dr. Barnard retired from his position as head of Cardiac Surgery in Capetown. It is a sad commentary on the vagaries of human illness to report that he developed degenerative arthritic processes to such a degree that, when I last saw him, he was barely able to cut his meat or to hold a cup of coffee.

But even on that occasion, as he was nearing his 60th birthday, Dr. Barnard had a new girlfriend he was squiring around town, to the consternation of some of his colleagues.

To me, it simply indicated that Dr. Barnard is not only a tremendous intellect, a tremendous opportunist, and a tremendous credit to the medical profession – but a tremendous human being.

Ed. Note: Dr. Barnard, now 64, retired from practice in 1983. He performed the world's first human heart transplant in December 1967 at the Groote Schuur Hospital in Capetown, South Africa.

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Resident Physician Essay Contest

During the 1987-88 resident training year the Resident Medical Society of the ISMA and INDIANA MEDICINE will conduct a medical essay contest. All members of the Resident Medical Society are eligible to enter. Each author may choose the subject. Essays (medical articles) will be limited in length to 10 pages of typescript, properly margined and double spaced. Illustrations are encouraged and are to be included in the space limitation. Each article submitted should not have been published previously and should be credited to one author only.

Entries should be mailed to INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208, and be postmarked prior to Jan. 1, 1988.

Judges will consist of two specialists within the field of the article, three medical education directors from Indiana institutions with approved residency training programs, and one member of the INDIANA MEDICINE Editorial Board.

Authors of the articles judged to be the four best will receive prizes of \$100 each, and an additional \$100 prize will be given to the best article of the four.

All prize-winning articles will be published in INDIANA MEDICINE. It is hoped that space will allow the publication of other entries to be chosen in the order of their numerical scores.

Essays will be judged on the following criteria: SCIENTIFIC MERIT: Research methods, data analysis, subject or patient population selection, control of variables, literature analysis.

APPLICABILITY: Usefulness of results to private practitioner, academician, researcher.

CONTENT: Depth of analysis, continuity of discussion supporting the main thesis, feasibility of conclusions.

INNOVATION: Uniqueness of idea, creativity, improvement of existing techniques, previously undiscovered data, advancement of basic understanding.

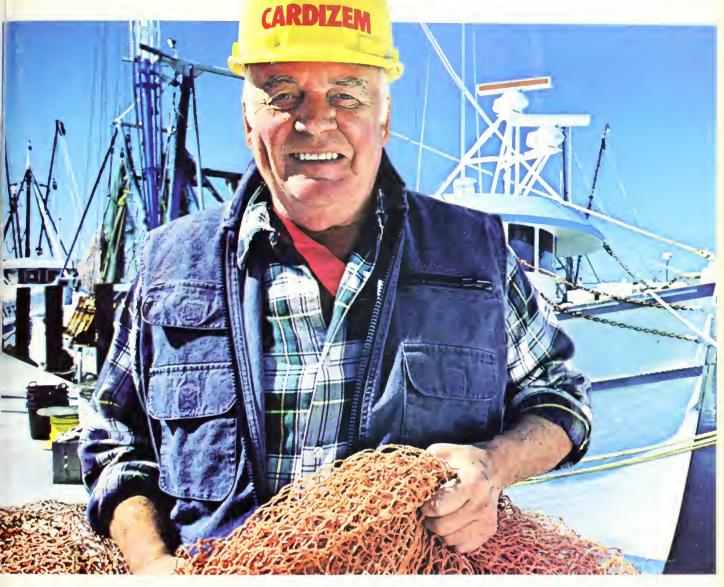
Each essay will be assigned a numerical score for each of the four judging criteria by each judge as follows:

0 Unacceptable 3 Good

1 Poor 4 Above average

2 Fair 5 Excellent

Give your angina patients what they're missing...



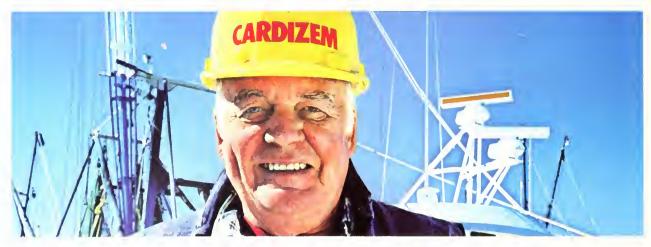
CARDIZEM: FEW SIDE EFFECTS

diltiazem HCI/Marion



- Antianginal action includes dilatation of coronary arteries, a decrease in vascular resistance/afterload, and a reduction in heart rate
- Proven efficacy when used alone in angina'
- Compatible with other antianginals 2,3°
- A safe choice for angina patients with coexisting hypertension, asthma, COPD, or PVD^{4,5}
 - *See Warnings and Precautions.

Please see brief summary of prescribing information on the next page.



CARDIZEM FEW SIDE EFFECTS IN ANTIANGINAL THERAPY diltiazem HCI/Marion

60 mg tid or gid

Brief Summary

Prafessianal Use Informatian

CARDIZEM

(dıltıazem HCI)

30 mg 60 mg, 90 mg, and 120 mg Tablets

CONTRAINDICATIONS

CARDIZEM is cantraindicated in (1) patients with sick sinus syndrame except in the presence of a functioning ventricular pocemaker, (2) patients with secand- ar third-degree AV block except in the presence of a functioning ventricular pocemaker, and (3) patients with hypotensian (less than 90 mm Hg systalic)

- WARNINGS
 - Cardiac Conduction, CARDIZEM pralanas AV node retractory periods without significantly prolonging sinus nade recavery time, except in patients with sick sinus syndrame. This effect may rarely result in abnarmally slaw heart rates (porticularly in patients with sick sinus syndrame) ar secand- ar philitia with switch states and synthesis for 0.48%) Cancamitant use of dilhazem with beta-blockers ar digitalis may resuff in additive effects an cardiac canduction. A patient with Prinzmetal's angina developed periods af asystale (2 ta 5 secands) after a single dase at 60 mg af
- Congestive Heart Failure. Althaugh dilliazem has a negative inatrapic effect in isolated animal tissue preporations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nar cansistent negative effects an contractility (dp/dt) Experience with the use at CARDIZEM alane ar in cambinatian with beta-blockers in patients with impoired ventricular function is very limited Cautian shauld be exercised when using the drug in such patients
- **Hypatension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally resuff in symptamatic hypotensian
- Acute Hepatic Injury. In rare instances, significant elevations in enzymes such as alkaline phasphatase, CPK, LDH, SGOT, SGPT, and ather symptams cansistent with acute hepatic injury have been noted These reactions have been reversible upon discontinuation at drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some (See PRECAUTIONS)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochlaride) is extensively metabalized by the liver and excreted by the kidneys and in bile. As with any new drug given aver prolanged periods, labaratary parameters shauld be monitared at regular intervals. The drug shauld be used with coutian in patients with impoired renal ar hepatic

function. In subacute and chranic dog and rat studies designed to produce taxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, aral dases at 125 mg/kg and higher in rats were associated with histalagical changes in the liver which were reversible when the drug was discantinued In dags, dases at 20 mg/kg were alsa associated with hepatic changes, hawever, these changes were reversible with cantinued dasing

Drug Interaction. Pharmacalogic studies indicate that there may be additive effects in pralanging AV canduction when using bela-blockers ar digitalis cancamitantly with CARDIZEM (See WARNINGS.) Cantralled and uncantralled damestic studies suggest

that cancamitant use at CARDIZEM and beta-blockers ar digitalis is usually well talerated. Available data are nat sufficient, hawever, to predict the effects of concomitant treatment, porticularly in patients with left ventricular dysfunction ar cardiac canduction abnormalities. In healthy valunteers, diffiazem has been shawn to increase

serum digaxin levels up to 20%.

Corcinogenesis, Mutagenesis, Impairment of Fertility. A 24-manth study in rats and a 21-manth study in mice shawed na evidence af carcinogenicity. There was alsa na mutagenic response in in vitra bactenal tests Na intrinsic effect an fertility was abserved in rats

Pregnancy. Categary C Reproduction studies have been canducted in mice, rats, and rabbits. Administration af dases ranging fram five to ten times greater (an a mg/kg basis) than the daily recommended therapeutic dase has resulted in embrya and fetal lethality. These dases, in same studies, have been reparted to cause skeletal abnormalities. In the perinatal/postnatal studies, there was same reduction in early individual pup weights and survival rates. There was an increased incidence af stillbirths at dases of 20 times the human dase ar greater There are no well-controlled studies in pregnant

wamen, therefare, use CARDIZEM in pregnant wamen anly if the potential benefit justifies the patential risk to the

Nursing Mothers. Diffiazem is excreted in human milk. One report suggests that cancentrations in breast milk may approximate serum levels. If use at CARDIZEM is deemed essential, an alternative method at infant feeding should be instituted

Pediatric Use. Satety and effectiveness in children have nat been established

ADVERSE REACTIONS

Seriaus adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impoired ventricular function and cardiac

canduction abnormalities have usually been excluded In damestic placeba-cantralled trials, the incidence of adverse reactions reported during CARDIZEM therapy was nat greater than that reported during placeba therapy

The fallowing represent occurrences abserved in clinical studies which can be at least reasonably associated with the pharmacalogy of colcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The mast camman occurrences as well as their frequency of presentation are, edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the fallowing events were reported intrequently (less than 1%)

Cardiavascular: Angina, arrhythmia, AV block (first degree), AV block (secand ar third dearee see canductian warning), bradycardia, cangestive heart failure, flushing, hypotensian, polpi-

tatians, syncape. Nervaus System Amnesia, gait abnarmality, hallucinatians, insomnia, nervausness, poresthesia, personality change,

somnalence, tinnitus, tremor. Anarexia, canstipatian, diarrhea, Gastraintestinal. dysgeusia, dyspepsia, mild elevatians at alkaline phasphatase,

SGOT, SGPT, and LDH (see hepatic warnings), vamiting, weight increase

Dermatalogic Petechiae, pruritus, phatasensitivity, urticaria Other.

Amblyapia, dyspnea, epistaxis, eve ırıtatian, hyperglycemia, nasol cangestian, nocturia, asteoarticular

poin, polyuria, sexual difficulties The fallowing postmarketing events have been reported intrequently in patients receiving CARDIZEM. alapecia, gingival hyperplasia, erythema multifarme, and leukapenia. Hawever, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established Issued 9/86

See camplete Prafessianal Use Information befare prescribing

References: 1. Pepine CJ, Feldman RL, Hill JA, et al. Clinical autcame after treatment at rest angina with calcium blockers Camporative experience during the initial year of therapy with dilliazem, nifedipine, and verapomil Am Heart J 1983, 106(6):1341-1347. 2. Shapira W Calcium channel blockers. Actions on the heart and uses in ischemic heart disease <u>Cansultant</u> 1984,24(Dec): 150-159 **3.** Jahnstan DL, Lesaway R, Humen DP, et al. Clinical and hemodynamic evaluation of prapranalal in cambinatian with verapomil, nifedipine and dittiazem in exertianal angina pectaris. A placebo-cantralled, dauble-blind, randamized, crassover study Am J Cardial 1985,55 680-687. **4.** Cahn PF, Braunwald E Chranic ischemic heart disease, in Braunwald E (ed). Heart Disease A Textbook of Cardiavascular Medicine ed 2 Philadelphia, WB Saunders Ca, 1984, chap 39 5. Schroeder JS Calcium and beta blockers in ischemic heart disease: When to use which. Mod Med 1982,50(Sept).94-116

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Age to begin	Female or male	Type of examination	When
16-25	F	Breast examination	Monthly by self; yearly in office
	F	Ultrasound of breasts	As indicated
	F, M	Chest x-ray	Yearly for smokers; others, every 3 years
25	F	Pap smear and pelvic examination	Yearly, beginning earlier when starting oral contraceptive pills
	F, M	Skin, nailbeds, nodes	Yearly
	F, M	Sublingual exam	Yearly
	F, M	Thyroid exam	Yearly
35	F	Mammogram	Initial test; then every 2 years age 40-50. Yearly after age 50.
	M	Ultrasound of scrotal contents	Every two years
40	F, M	Rectal exam	Yearly
	M	Scrotal exam	Yearly
50	M	Prostate exam	Yearly
	F, M	Sigmoidoscopy	Every 3 years
	F, M	Stools for blood	Yearly
	M	Ultrasound of prostate	Every 2 years

These recommendations are in accordance with the latest guidelines from the American Cancer Society.

Gene S. Pierce, M.D. New Albany, Ind.

PADS: A Program to Identify and Diagnose Prescription Drug Diversion in Indiana

Governor Says Problem Is "Larger Than Anyone Realizes"

Federal Statistics
Have Proven That the
Abuse of Prescription
Drugs Results in More
Injuries and Deaths
Than all Illegal Drugs
Combined... Hoosiers Rank
Sixth in the Nation
for Amphetamine
Consumption Alone...

In fact, Hoosiers rank sixth in the nation for amphetamine consumption alone; and last year 53% of all drugrelated emergency room visits reported to the federal Drug Enforcement Agency involved the use of legal prescription drugs in some way.

In this case, investigators place the emphasis on *legal* drugs, not illegal substances such as cocaine or marijuana. They're talking about those drugs that physicians legally dispense.

Now it's time to add yet another acronym to your vocabulary—PADS, short for Prescription Abuse Data Synthesis.

PADS is a model program developed by the AMA in 1981 to diagnose the nature and extent of prescription drug problems, to include drug diversion. In the past six years, about 25 states have implemented the program. The AMA provides technical assistance at no expense to the state.

When the AMA first responded in 1981 to the growing public health problem of prescription drug abuse, its House of Delegates adopted a report on drug abuse related to prescribing practices. The rapid increase in prescription drug abuse was attributed to the growing sophistication of drug dependent persons. They turn to prescription drugs because they are relatively easier to obtain, sometimes less expensive, and always of better quality and purity than "street drugs."

The 1981 report urged that the AMA cooperate with other national

professional associations and government agencies to come to grips with the problem. Shortly thereafter, a coalition of more than 20 public and private sector organizations began the process of identifying the problems and developing programs to combat them. One of the first projects developed under the mandate was PADS.

Last fall, the ISMA House of Delegates asked that the PADS program be implemented in Indiana (Resolution 86-22). The resolution pointed out that federal statistics have proven that the abuse of prescription drugs results in more injuries and deaths than all illegal drugs combined. The Indiana program actually got underway a short time later when

TABLE 1 PADS Steering Committee

Leah Mannweiler, Executive Assistant to Gov. Orr

William Keown, Executive Director, Health Professions Bureau

Richard R. King, Executive Director, ISMA

Captain Donald Brackman, Special Investigations, Indiana State Police

Tara Lenn French, Asst Administrator, Medicaid Division, Indiana Dept. of Public Welfare Governor Robert Orr's office agreed to be the sponsoring agency. Then the 1987 General Assembly passed HEA 1697, which created a statutory Prescription Abuse Study Committee.

Even before the legislation was passed, however, a PADS steering committee (Table 1) was using the original AMA PADS report to help identify problems in Indiana. This report was presented to Governor Orr during a news conference July 29 by the American and Indiana State Medical Associations.

The report indicates prescription drug abuse is indeed a problem in Indiana. Four prescription drugs have inordinately high per capita consumption in Indiana: amphetamine use ranks sixth in the nation; methamphetamine, eighth; phenmetrazine, fifth; and secobarbital, ninth.

Joining Governor Orr at the July 29 news conference were Dr. Shirley Thompson Khalouf, ISMA president, and Dr. John Ring, vice-chairman of the AMA Board of Trustees, as well as members of the PADS Steering Committee.

Among the recommendations presented to the governor, along with the report, were:

- That a diversion investigation task force be created to formalize communications and coordinate investigations by the Indiana State Police, the Health Professions Bureau and the Attorney General's Office.
- That the prescription abuse problem be reduced by employing the use of computerized prescription systems and forgery-proof prescription forms, and that prescribers and dispensers of prescription drugs be educated about the techniques of abusers, such as doctor shoppers and prescription forgers.
- That existing data systems employed by third-party payers in Indiana use the practitioner's license number, as assigned by the Health Professions Bureau, as a single and unique identifier; and that the Medical Licensing Board require that the prescriber's



Dr. John Ring (left), vice chairman of the American Medical Association Board of Trustees, explains the six recommendations made in the Prescription Abuse Data Synthesis (PADS) report. Dr. Shirley Thompson Khalouf, ISMA president, joined Dr. Ring to present the report to Gov. Robert D. Orr (center) during a news conference July 29 in the governor's office.

license number appear on all prescriptions.

- That the ISMA and the Indiana Association of Osteopathic Physicians and Surgeons develop proposed regulations to identify the accepted medical use and prescribing of amphetamines in Indiana, perhaps prohibiting their use for weight control.
- That the Prescription Abuse Study Committee develop procedures to promptly identify impaired health care practitioners and to take appropriate action for the sake of protecting the public.
- That peer review practices be improved through better orientation of licensing board members and better education of professionals about the need for expert witnesses in the adjudication process.

In explaining the prescription drug problems and the PADS program during the news conference, Dr. Khalouf said, "As physicians, we are trained to diagnose and to treat them. PADS is a comprehensive diagnosis of the nature and extent of the prescription drug abuse problem in a state. It looks at the symptoms and the underlying causes of the problem.

"After looking at the symptoms, the kinds of drugs being abused and their sources of diversion, PADS looks at the underlying causes that perpetuate the problem," she said.

She explained that more than 20 groups from law enforcement, regulatory and state agencies, professional associations, drug rehabilitation centers, and business and industry developed the consensus report.

Data from several sources were used, including the U.S. Drug Enforcement Administration, Indiana Department of Welfare (Medicaid Division), State Police Crime Lab, National Institute on Drug Abuse, Health Professions Bureau and the State Board of Health. Abuse treatment admission

TABLE 2 Prescription Abuse Study Committee

David A. Miller, J.D.,

Chief Counsel, Attorney General's Office

Edward L. Langston, M.D., Flora

Dennis McCallian, P.D., Fowler

Robert Scott, P.D., Columbus

Barry McDowell,

Exec. V-P, Reid Memorial Hospital, Richmond

Jane Spencer Craney,

Morgan County Prosecutor, Martinsville

Suzanne Turner, Indianapolis

State Rep. Don Nelson, Indianapolis

James J. Wright, M.D.,

Mid-town Mental Health, Indianapolis

Eugene C. Roach, M.D., Indianapolis

John H. Holt.

Eli Lilly and Company, Indianapolis

Ed Beyerstedt, Evansville

Paul Hugentober, Supervisor, USDEA Region V, Indianapolis

Captain Donald Brackman,

Special Investigations, Indiana State Police, Indianapolis

John Hinton, D.O., College Corner

Judith Christensen, R.Ph., Elkhart

William S. Keown,

Exec. Director, Health Professions Bureau, Indianapolis

Nancy A. Walsh, R.N., Westview Hospital, Indianapolis

data from the Indiana Hospital Association, the Department of Mental Health, and the Koala Centers also were used.

Analysis of the information indicated areas of potential prescription drug diversion.

Representing the AMA, which underwrote the cost of the PADS program in Indiana, was Dr. John Ring. Presenting the report's recommendations to the governor, Dr. Ring commented that "the majority of drug related deaths are from drugs manufactured for legitimate medical use."

In response, Governor Orr said, "I am pleased to accept this report and to thank the AMA, the ISMA, and the PADS group for this survey of Indiana's prescription drug abuse problem. This is a fine example of public/private cooperation in Indiana's War on Drugs." He noted that the problem of prescription drug abuse "is simply much larger than anyone realizes."

"It also costs taxpayers a great deal of money in Medicaid funds," he said. "According to Medicaid prescription drug data used in the survey, we find that in 1986 alone, over \$500,000 in Medicaid funds were spent on Valium and nearly \$1 million was spent on Darvocet."

The news conference concluded with the announcement of appointments to the Prescription Abuse Study Committee (*Table 2*).

In Indiana, the agenda is set. The "machinery" is in place. The problem, prescription drug abuse, has been identified. Ideas for solving the problem are flowing freely. All that is needed for success is more education and plenty of cooperation.

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MUSEUM NOTES...

CONTINUED FROM PAGE 814

here are not the regional books, journals and other documentary material being collected in behalf of the Medical Museum and for the medical history section of the Indiana Historical Society's library. The materials sought by these three organizations are distinctly different. There is no competition and no overlap of interest.

Once it is established that you are indeed in possession of books that would be of value to the Medical Library, they can be made available to the Library by means of a simple bequest. Appropriate credit for inheritance tax purposes will be provided. The second possibility is to donate the collection or parts thereof to the Medical Library during your lifetime; this has considerable tax advantages. Although the Internal Revenue Service is coming down harder and harder on such cases, it is also possible, as has been done with paintings and the like for many years, to donate the books to the Library during your lifetime but to retain all or part of the collection, technically already the property of the Medical School Library, in your residence for the rest of your natural life. This would provide you with a tax deduction now. There are some problems here but the John Shaw Billings Society is again able, through the kind help of Professor Lawrence A. Jegen, professor of tax law at IUPUI, to provide expert consultation.

As you can see, there are a number of possibilities, the actual choice to be tailored to your needs, by which books of historical or scientific value can be made available to the Indiana University School of Medicine Library. The John Shaw Billings Society stands ready to provide assistance for such projects.—Jans Muller, M.D., Indiana University School of Medicine, 635 Barnhill Drive, MS A112, Indianapolis 46223—(317) 274-8577.



AUXILIARY REPORT

Anne Throop, Indianapolis ISMA Auxiliary President 1987-88

Auxiliary is well known throughout the medical community as an outstand ing organization to raise funds for charitable endeavors and to create programs that further the public's knowledge about health subjects. However, auxiliary also has programs that assist and develop its own membership. Both national and state auxiliary actively design and present programs created to further the expertise of members in the art of leadership. The skills gained from these programs not only allow the auxiliary member to become more effective in the performance of duties in the auxiliary itself, but also allow those skills to spill over into the work to be done in other organizations.

Without doubt, the most comprehensive of these programs is the AMA-A Confluence, held in the fall and again in the spring of each year in Chicago. "National" produces a three- to four-day intensive training program for the county and state presidents elect. During this meeting national officers as well as professional speakers on a number of subjects inspire, direct, suggest, and discuss virtually all aspects of auxiliary leadership.

Similarly, state auxiliaries sponsor programs and workshops throughout the nation. Traditionally each fall the Indiana State Medical Auxiliary creates a one-day program, open to all auxiliary members statewide, to concentrate on areas of concern to the auxiliary. The major topics vary from year to year. One of these programs emphasized a complete review of all the projects and program directives for auxiliary and proved to be an outstanding introduction to auxiliary for new members. Another year the workshop concentrated on membership - how to recruit new members and retain exist-



Jill Pittman, whose spouse is a resident in General Surgery at Methodist Hospital, Indianapolis, discusses the role of residents' wives in the Auxiliary. She addressed Auxilians during a Membership/Marketing Workshop held in May.—Photo by Stzanne Miller

ing members.

This fall, ISMA-A President Anne Throop, feeling that it is time to go to the counties themselves for input, has designed three workshops—one each for the northern, central, and southern areas of the state. The content of these workshops will be based on the needs expressed by the counties. Throughout the summer, the state area vice

presidents have been working with the county presidents to determine what areas of need exist for each county.

Thusfar, the results of the discussions have shown marked similarities in some areas and isolated cases of need in others. A few counties have requested help in the mechanics of leadership, i.e., creating committees, chairing meetings, and inspiring cooperation. Many of the counties have expressed concern over the declining image of medicine and are seeking suggestions as to how they may help in public relations for the medical profession. Still other counties are concerned with the problems of maintaining interest in auxiliary from members who have diverse interests backgrounds.

None of these are new problems, nor are there any perfect solutions to any of them. However, the ISMA-A is determined to review all of its resources and do the best job possible to provide answers, suggestions, and training to solve the problems or, at least, reduce them in size.

As medicine continually becomes an ever expanding field of successes - and of new problems to be solved - so too does the work of auxiliary. Each year medicine and the auxiliary face new challenges and each year progress is made toward the goal of providing healthy lives for the people of this nation. It isn't necessary to travel far beyond our national boundaries to compare medical care and realize what a truly magnificent job America is doing. Auxilians indeed deserve to be proud of their part of this great accomplishment and in their support of the workshops and training provided by auxiliary to maintain a flow of leadership for the years ahead. - Rod Ashley, Northern Area Vice-President

CARDIOLOGY DIAGNOSTIC AND INTERVENTIONAL

WILLIAM K. NASSER, M.D.

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CENTRAL INDIANA CHAPTER OF ONCOLOGY NURSING SOCIETY (ONS). Will meet Monday, Sept. 21, at 7 p.m. in the classroom at Westview Hospital. (Regular meeting is the third Monday of each month.) All interested oncology nurses are welcome. For further information contact Susan Sturgeon, R.N., (317) 924-6661, ext. 212. Dues are \$10 annually.

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INFORMATION FOR PHYSICIANS: IRRADIATION-RELATED THYROID CANCER. This booklet provides guidelines for physicians for detection, diagnosis, treatment, and follow-up of irradiation-related thyroid cancer.

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COPING WITH CANCER—A RESOURCE FOR THE HEALTH PROFESSIONAL. A complete reference work on the psychological and social aspects of cancer. It summarizes the issues faced by cancer patients of all ages and their families and provides practical guidance to caregivers in responding to patient and family needs. Support programs available throughout the country are described. References for further reading and an easy-to-use subject index are included.

STUDENTS WITH CANCER (84-2086). This is designed for teachers who have students with cancer in their classrooms or schools. It includes explanations of cancer, its treatment and effects, and guidelines for the young person's re-entry to school and for dealing with terminally ill students. Bibliographies are included for both educators and young people. This booklet is a cooperative venture between the NCI and the Washington,

D.C., Metropolitan Candlelighters and the Department of Hematology-Oncology at the University of Kansas Medical Center.

HELP YOURSELF: TIPS FOR TEENAGERS WITH CANCER. This 40-minute audiotape includes four radioplay-style stories entitled "The Day They Told You," "Your Family," "Your Treatment," and "Your Friends." This tape is designed to provide information and support for adolescents with cancer.

THE NATIONAL CANCER INSTITUTE offers a fact book providing general information about the National Cancer Institute including budget data, grants and contracts, and historical data. Also offered is the NATIONAL CANCER INSTITUTE GRANTS PROCESS. This describes NCI grant award procedures; includes chapters on eligibility, preparation of grant application, peer review, eligible costs, and post-award activities.

CANCER RATES AND RISKS, 3RD EDITION (85-691). This is a compact guide of statistics with sections on risk factors and on risks of major cancer sites. It includes charts and graphs showing incidence, mortality, and survival worldwide and in the U.S. It also contains a section on the cost of cancer.

Packet describing the International Cancer Research Data Bank program of information services, publication, and other activities can be obtained by writing to ICRDB, The National Cancer Institute, R.A. Bloch International Cancer Information Center, Building 82, Room 103, Bethesda, Md. 20892, or call (301) 496-7403.

NEWS NOTES

HCFA Agrees to Changes in Medicare's PRO Sanction Process for Physicians

The federal government's Health Care—Financing—Administration (HCFA) has agreed on changes in Medicare's Peer Review Organization (PRO) sanction process. According to the AMA, HCFA has issued a revised PRO manual to each state PRO that is expected to assure physicians of adequate protection and fairness in the PRO sanction process.

Some of the new procedures covered in the revised PRO manual, designed to assure appropriate due process, are

- More adequate and detailed notice of the charge against the physician, the physician's rights, and the consequences of a PRO hearing or "discussion;"
- The right to a transcript of the "discussion:"
 - The right to counsel;
- The right of counsel to present the case and ask clarifying questions;
- Relaxation of confidentiality rules to allow experts access to records.
- The right to bring expert witnesses:
- The right to an extension of time for good cause;
- Exclusion of PRO physicians in direct economic competition:
- Exclusion of PRO screening physicians from voting on the sanction:
 - An opportunity for the physician



"Take two carrots and call me in the morning."

to present new evidence within five days after the PRO discussion;

- An option for the physician to notify patients personally of the sanction, rather than having it published in a local newspaper:
- A clarification of the administrative law judge stage as a new review, allowing the physician to subpoena witnesses and present new evidence.

Although the right to cross examine PRO screening physicians was left unresolved, HHS has agreed to explore the issue. How to shorten the hearing process and reduce the time span bet ween the request for a hearing and the resolution of the case will also be studied.

New Indiana Law Details Patient's Informed Consent

SEA 409, dealing with informed consent, was passed into law by the 1987 Indiana General Assembly and became effective Sept. 1. (See "Informed Consent" on page 772, August 1987.)

The legislation specifies that a patient's consent to treatment is presumed to be an informed consent if it meets the following conditions:

- It is in writing:
- It is signed by the patient or the patient's authorized representative:
- It is witnessed by an individual who is at least 18 years old;
- The patient's treatment, procedure, examination or test to be undertaken is explained, either verbally or in writing, before the treatment is begun.

The informed consent explanation must include the general nature of the patient's condition. In addition, the expected outcome, the material risks involved, and the reasonable alternatives to the proposed treatment, procedure, examination or test must be explained.

Compliance with this law creates a rebuttable presumption that the consent is informed. The law does not exclude an informed consent from being given verbally; however, written consent is preferable. The law does not require consent to medical care in an emergency.

Intermediate Care Facility Found Guilty of Criminal Recklessness

An intermediate care facility was guilty of criminal recklessness in allowing a profoundly retarded resident to suffer burns from hot water in a bathtub, an Indiana appellate court has ruled.

The 42 year-old patient was unable to bathe himself and had few expressive skills such as crying or talking. He received severe burns to his hips, legs and feet when left unattended in a bathtub filled with hot water.

A jury found the facility guilty of criminal recklessness, but the trial court ruled in favor of the facility. Reinstating the jury verdict, the appellate court said that the evidence supported the jury's finding of criminal recklessness by the facility. —State of Indiana v. Monticello Developers, Inc., 502 N.E.2d 927 (Ind. Ct. of App., Jan. 20, 1987)—Courtesy of The Citation, June 15, 1987.

Community Centers to Offer Care and Assistance for Alzheimer's Victims

The Robert Wood Johnson Foundation has announced the first major national effort to demonstrate that financially viable, comprehensive services can be provided for the 2 million Americans with dementing illnesses—primarily Alzheimer's disease—and their caregivers.

The Foundation's Dementia Care and Respite Services Program will provide \$7.5 million to fund about 25 adult day programs: the program will be cofunded by the Alzheimer's Disease and Related Disorders Association (ADR-DA) and, possibly, the federal Administration on Aging.

The intent of the program is to set up "community centers" for providing the full range of in-home and community dementia care and respite services. The centers will coordinate managed referral to other community agencies such as the ADRDA and local area agencies on aging.

WHY NOT "I"?

Commentary

Students are repeatedly taught by high school and college English teachers not to use "I". And many of the medical journals don't like "I". There is a constant effort to deper sonalize medical writing Look at the histories, physicals, progress notes, laboratory reports and radiology reports in your hospital.

I think the feeling is that avoiding "I" makes the prose more scientific, more credible, more disinterested and therefore more likely to be true.

Anvone who has diagnosed and treated sick or injured people or who has done scientific research knows that it is done with work, effort, and passion-often cool, but sometimes hot-if it is going to get good results.

The use of "I" strengthens a report or statement. English, especially American English, is noted for its force and flexibility. Let's use these assets we have been given.

"I" is brief and gives authority to a sentence. "I don't give any active or infectious tuberculosis," in a chest x ray report is more reassuring to the anx ious patient.

Look at the beauty and power of "I" in other places, in other times.

"Veni, Vidi, Vici," - how could it be said better?

"Cogito, ergo sum" - likewise.

"I pledge allegiance to the flag of the United States of America... powerful statement. Substitute something else for "I", like "This citizen pledges allegiance . . ." It won't work. Commitment isn't there, and it is immediately sensed

Similarly, look at "I believe in God the Father Almighty. Creator of Heaven and Earth..." substituting "This person" or "This believer." or recast this sentence into a passive voice, and you see again a milksoppy statement after which no person would want to believe.

"I gives a sentence authority.

I'm sure you can find good examples of writing with the use of "I". They're

The teachers who over react against "I" are probably trying earnestly to keep their students from being too egocentric in their writing - starting every sentence with "I". I agree; that's not desirable. The writing of young teenagers often has that problem.

But medical students, physicians, and other adults don't have the growing up problems of teenagers. I think adults should be encouraged to sprinkle I's through their writing - for force, beauty, and interest. - Richard J. Noveroske, M.D., Newburgh

JCAH Appoints Three Task Forces Charged with Devising New Accreditation Process

Kicking offits four year initiative to devise a new accreditation process, the Joint Commission on Accreditation of Hospitals has appointed three task forces:

The Hospitalwide Clinical Indicators Task Force will identify indicators to be used in screening quality of patient care throughout the institution. Such indicators may, for example include nosocomial infection rates, surgical complication, or drug reactions.

The Obstetrical Care Task Force will

identify clinical indicators for monitor ing obstetrical care, which may, for example, include neonatal birth injuries or incidence of eclamptic seizures.

Finally, the Anesthesia Care Task Force will address quality indicators such as anesthesia related nerve in jury, hypovolemia, and aspiration pneumonitis.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Physician Recognition Awards -



Fattu, James M., Evansville

Hayes, David M., Evansville

Huus, John C., Evansville

Guthrie, James U., Peru

Grossman, Darla R., Evansville

Cortese, Thomas A. Jr., Indianapolis

Heumann, Gregory K., Indianapolis

Hovhanessian, Banipal, Kokomo

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

> Jardenil, Romulo S., West Lafayette Knight, Lewis W., Fort Wayne Ko, Benny S., Terre Haute Kobak, Alfred J., Valparaiso Leman, Eugene, Crown Point Lewis, Merral B., Evansville Marhenke, Jon D., Indianapolis Mentzer, William G., Lafayette Metzger, Philip P., Fort Wayne



Morgan, Randall C., Garv Patel, Shodhan L., Merrillville Ramker, Daniel T., Hammond Seidle, Michael E., Muncie Smith, Philip L., Fort Wayne Trachtenberg, Lee H., Munster Wanee, Neil R., Indianapolis Zunich, Janice, Gary

NEWS NOTES

Here and There...

Dr. Jack T. Collins of Bluffton is the new president of the Indiana Affiliate, American Heart Association.

Dr. Dean D.T. Maglinte of In dianapolis served on the faculty of a review course on Disorders of the Small Intestine, conducted in June at the Radcliffe Infirmary, University of Oxford, England.

Dr. Jerry L. House of Indianapolis recently participated in a symposium on Cochlear Implants in Deaf Children, held in Wild Dunes, S.C.

Dr. Louis Moosey of LaPorte recently spoke to 75 members of the LaPorte Lions Club on the causes and prevention of heart attacks.

Dr. John L. Zettelmaier of Chesterton presented his Dr. Benjamin Rush program, "A Country Doctor Talks about America," to psychiatry residents and faculty at the University of Rochester (N.Y.) Medical Center, in July.

Dr. Richard T. Miyamoto of Indianapolis has been appointed chairman of the Dept. of Otolaryngology, Indiana University School of Medicine, succeeding Dr. Raleigh E. Lingeman.

Dr. Robert D. Yee, formerly professor of ophthalmology at the University of California Medical Center at Los Angeles, is the new chairman of the Dept. of Ophthalmology, Indiana University School of Medicine.

DOCTOR

DOCTOR

Rum

"Now the State wants a copy of every report we make to the government in duplicate."

Dr. Frank D. Byrne of Fort Wayne has been elected president of the Indiana Thoracic Society.

Dr. G. Grant Gehring and Dr. Walter R. Vaughn of Vincennes recently discussed the causes and treatment of kidney stones and impotence in a public seminar at Good Samaritan Hospital.

Dr. Robert M. Seibel of Nashville discussed arthritis during a recent program sponsored by the Brown County Dept. of Health.

Dr. James R. Rohrer, a recently retired Elnora physician, served as grand marshal of the 1987 Daviess County Fair; the theme, "Country Doctor," was selected in his honor.

Dr. Mario Leon of Jasper was honored in June by the American College of International Physicians for being one of its founders.

Dr. Warren L. Bergwall has closed his 32-year practice in Muncie to become director of Ball Memorial Hospital's Family Practice Center; he succeeded Dr. Ross L. Egger, founder of the center and its director since 1969.

Dr. Mark Wisen of Bloomington has been certified by the American Society of Neuro-Imaging.

Dr. J. Timothy Deppe of Terre Haute has been certified in pulmonary medicine by the American Board of Internal Medicine.

National Autologous Blood Resource Center Offers Assistance, Pamphlets

The National Autologous Blood Resource Center, established recently in Arlington, Va. by the American Association of Blood Banks (AABB), is offering detailed protocols for establishing these services in hospitals and blood centers.

The use of autologous blood is rapidly increasing, according to Dr. Robert L. Thurer of the AABB. He points out that such use has been endorsed by the Council of Scientific Affairs of the American Medical Association.

The Resource Center's purpose is to promote use of the preoperative deposit of autologous blood and the intraoperative and postoperative salvage of shed blood. The Center has developed pamphlets concerning predeposit blood donation for patients, physicians and allied health personnel. A brochure directed toward physicians addressing intraoperative and postoperative blood salvage is also available.

Pamphlets and protocols are offered without charge. Contact Ms. Lieta Maffei, AABB National Office, 1117 N. 19th St., Suite 600, Arlington, Va. 22209 – (703) 528-8200.

\$3.2 Million in Grants Awarded to Conduct Studies of Medical Malpractice

The Robert Wood Johnson Foundation has granted \$3.2 million to 14 projects whose efforts will advance knowledge about what constitutes malpractice, what causes it, and how it can be prevented.

Each of the 14 grantees will receive up to \$300,000 for a one-to-three-year period. A second round of grants will bring the total funding to as much as \$6 million.

The aim is to determine whether there are identifiable factors in medical practice or among medical practitioners that can help predict malpractice; improve risk management; assess alternative methods of setting malpractice insurance premiums, including both experience-rating systems and nofault systems; and evaluate the effectiveness of efforts to reform state tort law.

Among those receiving the grants is Eleanor D. Kinney, J.D., M.P.H., an assistant professor of law at Indiana University. She will study the impact of tort reform on the availability of health care services and the adequacy of compensation for injured patients in Indiana.

For the Asking...

- "When Should You Recruit for a New Physician?" is the lead article in the June issue of The Physician's Advisory. The idea is to "begin to search before the need is too great." The June issue also discusses marketing survey results, the use of plastic charge cards for payments, and "Perspectives on Medical Practice"-a look at the changes in medical practice that will ensue as more women M.D.s enter practice. The July issue's main question is "What's a Standard Arrangement for a New Partner?" Issue price is \$15; the annual price is \$120. Write or call MCA Publications, P.O. Box 126, Bala Cynwyd, Pa. 19004 - (215) 667-2341.
- The University of Michigan's nonresidential master's degree program in health services administration is now recruiting for its 10th class, scheduled to begin in Fall 1988. The On Job/On Campus program (OJ/OC) was established in 1972 to address the needs of employed health professionals who are interested in advanced training but are unable to return to campus full time. The program makes it possible for students to retain their employment while traveling to Ann Arbor once each month for an intensive fourday weekend of classwork. Write: David Perlman, M.P.H., OJ/OC Pro-

Physician Urges Use of Nicotine Identifier Code

Letter to the Editor

I wish to remind all of my fellow physicians that the ICD-9-CM code for nicotine dependence is 305.1. This diagnosis should be included for any patient (who has the problem) for whom an insurance form is completed.

Nicotine dependency is a recognized addiction and needs to be documented. This documentation to the insurance companies allows for improved statistics and assessment of the health care needs of the population.—Randolph W. Lievertz, M.D., Indianapolis

- gram Manager, Dept. of Health Services Management and Policy, School of Public Health, University of Michigan, Ann Arbor, Mich. 48109.
- "The Disabled Child and Child Abuse" (2nd edition) has been published by the National Committee for Prevention of Child Abuse. The Committee reports mounting evidence that the handicapped or disabled child may be at greater risk for abuse. For this booklet and a catalog of other publications, contact the Committee at 332 S. Michigan Ave., Suite 950, Chicago 60604—(312) 663-3520.
- "Stress and the Single Parent," a pamphlet intended to help individuals cope with the additional problems and pressures of single parenthood, has been published by the National Committee for Prevention of Child Abuse. "Annie Overcomes Isolation" has also been released, as the newest addition to a series of easy-read booklets dealing with parenting and child abuse. "Stress" costs \$1, "Annie" \$2.50. The address is NCPCA Publishing Dept., 332 S. Michigan Ave., Suite 950, Chicago 60604.

\$900,000 Exhibit to Promote Healthy Lifestyle for Kids

The W. K. Kellogg Foundation has awarded a grant of \$900,000 to Chicago's Museum of Science and Industry for the development of a permanent exhibit on health promotion for children.

The exhibit is aimed at motivating youth to adopt healthy lifestyles by focusing on social, emotional and behavioral growth and development.

The director of education for the Museum announces: "The Museum's exhibit will utilize computers and video disc technology. Our intent is to engage our visitors in hands-on activities which will effectively teach them the causes of physical and emotional problems in children. We want to motivate our audience to take control and responsibility for their health."

- "Magnetic Resonance Imaging" is the subject of an NIH Consensus Development Conference scheduled for Oct. 26-28 at the Masur Auditorium, Bethesda, Md. If you plan to attend, write Sharon Feldman, Prospect Associates, 1801 Rockville Pike, Suite 500, Rockville, Md. 20852.
- Holiday greeting eards created exclusively for the medical profession are being offered by an Indiana firm. Straight Status, Inc. recommends its cards for patients, referral sources, family and friends. They are 5 x 7-inch and printed on high gloss enamel stock. For information and a free catalog: Straight Status, Inc., P.O. Box 445, New Castle, Ind. 47362—(800) 772-9858 toll-free in Indiana.

House Bill Would Eliminate Physician Dispensing

A bill now before Congress could, if it becomes law, eliminate physician drug dispensing.

Wyden Bill H.R. 2093 is opposed by the American Medical Association, the American Academy of Family Practice, the Group Practice Association, the Federal Trade Commission, the National Association for Ambulatory Care and the pre-packaged prescription industry.

The bill is supported by the National Association of Retail Druggists.



NEWS NOTES_

New ISMA Members

Warren D. Balazs. D.O., Indianapolis, otolaryngology.

Steven L. Bojrab, M.D., Carmel, psychiatry.

Daniel A. Boll, M.D. South Bend, nuclear medicine.

Talluri S. Devi, M.D., Jeffersonville, obstetrics and gynecology

Moises B. Domingo, M.D., Fvansville, therapeutic radiology.

Michae A. Gunter, M.D., Marion, general surgery.

Robert J. Hagen. M.D. Lafayette, orthopedic surgery

Richard S. Harsell M.D. In dianapolis obstetrics and gynecology.

 $\label{eq:theorem} Tane cm\ U + Haque\ M\ D.,\ Evansville, one ology$

Thomas M. Hoess, M.D., Valparaiso, radio ogy

Leighton C. Johnson Jr., M.D., Indianapolis orthopedic surgery.

Frederick T. McFall Jr. M.D., Crawfordsville, radiology

Terr Pellow, M.D., Greenwood, psychiatry

George H. Rodman Jr. M.D. Indanapors general surgery.

Armat d Rothschild, M.D., Jefferson v.H.c. card.ovascular diseases.

Julius S. Sitjar, M.D., Rochester, ir ternal nacdicale.

Richard M. Storm, M.D., Indianapolis, dermatology.

David E. Wilson, M.D., Noblesville, otoaryngology.

"The men are here to coffect the insurance or minums."

Residents:

Wallace M. Anderson, M.D., Indianapolis, diagnostic radiology.

Mohammad S. Bahrami, M.D., Muncie. family practice.

Beth A. Bigham, M.D., Evansville, family practice.

Jeffrey C. Bird, M.D., Muncie, family practice.

Duane L. Birky, M.D., Indianapolis, neurology.

Caroline A. Boehnke, M.D., Indianapolis, obstetries and gynecology.

Kristina M. Box, M.D., Indianapolis, obstetries and gynecology.

Michael J. Brennan, M.D., In dianapolis, general surgery.

Linda K. Bresnahan, M.D. In diarapolis, obstetries and gynecology. Jane M. Bridges, M.D., Fort Wayne.

Jane M. Bridges, M.D., Fort Wayne Limity practice.

David S. Brokaw, M.D., Indianapolis, orthopedic surgery

Dale R. Broome, M.D. Indianapolis. diagnostic radiology

Jeffrey J. Buffo, M.D., Indianapolis, anesthesiology.

Linda S. Burns, M. D., Indianapolis, emergency medicine

Michael J. Catellier. M.D., Indianapolis, anatomic clinical pathology.

Stephen F. Champion, M.D., In dianapolis, emergency medicine.

David K. Cheng, M. D., Indianapolis, internal medicine.

Richard D. Clark, M.D., Indianapolis, family practice

Mark E. Davisson, M.D., Muneie, in ternal medicine.

Christina C. Drunimond, M.D., Indianapolis, family practice

John M. Duchak III. M.D., Indianapolis, internal medicine.

P. Eva Fadul, M.D., Indianapolis, anesthesiology.

James S. Fix. M. D., Indianapolis, internal medicine

Mary A. Frazier, M.D., Indianapolis, family practice

Sharon K. Fulton. M.D., Indianapolis, ophthalmology.

Mark A. Getz, M.D., Indianapolis, internal medicine.

Anne H. Gilbert, M.D., Indianapolis, psychiatry.

James H. Goszkowski, M.D., In-

dianapolis, internal medicine.

Harriet A. Hamer, M.D.. Indianapolis, anesthesiology.

Jerry A. Hancock, M.D., Indianapolis, obstetrics and gynecology.

David M. Harsha, M.D., Indianapolis, family practice.

Andrew C. Hawk, M.D., Indianapolis, emergency medicine.

David E. Hoover, M.D., Indianapolis, anesthesiology.

Wen Ren Hsieh, M.D., Indianapolis, general surgery.

Sharon K. Hull, M.D., Terre Haute, family practice.

Harry C Knight Jr., M.D., In dianapolis, family practice.

Deborah M. Latimer, M.D., Indianapolis, pediatrics.

David T. Lee, M.D. Indianapolis, internal medicine.

Linda F. Martin, M.D., Indianapolis, obstetries and gynecology.

Stephen L. Matney, M.D., In dianapolis, psychiatry.

Michael T. McCann, M.D., In dianapolis general surgery.

Robert E. Mehl Jr., M.D., In dianapolis, radiology.

Elizabeth A. Miller, M.D., In dianapolis, family practice.

Kathleen M. Miller, M.D., Indianapolis, psychiatry

Fidelis O Mkparu, M.D., In dianapolis, internal medicine.

Jeffrey R. Mossler, M.D., Indianapolis, internal medicine.

Kyle O. Mounts, M.D., Indianapolis, pediatrics

Robbyn M. Nein, M.D., Indianapolis, unspecified.

Rod Nisi, M.D., Cineinnati, Ohio, internal medicine.

Mark A. O'Shaughnessy, M.D., Indianapolis, internal medicine.

Mark R. Ogle, M.D., Indianapolis, psychiatry.

Stephen R. Pfeifer, M.D., Indianapolis, family practice.

Valerie K. Pratt, M.D., Indianapolis, pediatries.

John C. Pritehard, M.D., Indianapolis, orthopedic surgery.

Michael A. Russell, M.D., Indianapolis, emergency medicine.

CONTINUED ON NEXT PAGE

William R. Schmidt II, M.D., Indian apolis, internal medicine.

Randall S. Schwartz, M.D., Oaklandon, internal medicine.

Gregory M. Scott, M.D., Indianapolis, pediatrics.

Inder K. Seekri, M.D., Indianapolis, general surgery.

Thomas L. Sevier Jr., M.D., Indianapolis, unspecified.

Wayne T. Spears, M.D., Indianapolis, therapeutic radiology.

Susan R. Steffens, M.D., Indianapolis, pediatrics.

Randall L. Stevens, M.D., Terre Haute, family practice.

Wilfredo J. Suntay, M.D., Indianapolis, radiology.

David H. Tharp, M.D., Indianapolis, anesthesiology.

Robert W. Tolan Jr., M.D., Indianapolis, pediatrics.

Maria A. Valena, M.D., Indianapolis, psychiatry.

Eric A. Vonderohe, M.D., Indianapolis, emergency medicine.

Marijana K. Vosika, M.D., Martinsville, psychiatry.

Jeffrey C. Warner, M.D., Indianap olis, anatomic/clinical pathology.

Gary R. Youmans, M.D., Indianapolis, anatomic/clinical pathology.

Nancy Zinni, M.D., Indianapolis, general surgery.

New Members Sought for Revived John Shaw Billings History of Medicine Society

After a hiatus of almost 20 years, the John Shaw Billings History of Medicine Society, once flourishing at the Indiana University School of Medicine, has been revived.

The Society was formally incorporated by the secretary of state for Indiana on Jan. 12, 1987. The board of directors consists of Dr. Sidney Ochs, president, Dr. Jans Muller, secretary treasurer, Dr. Charles A. Bonsett and Dr. Robert M. Worth.

Membership is open to all interested parties, both in and outside the faculty of the School of Medicine. Applications are invited from graduates as well as from students. A Constitution and Bylaws is available for review. Annual dues are \$5.

The Society's fundamental aim is to advance the cause of the history of medicine/medical sciences. It also would like to support projects in oral history, aid in the collection and display of materials of medical historical interest, and facilitate the donation of significant books to the historical section of the I.U. School of Medicine Library. (For more about the Society, see "Medical Museum Notes," page 814.)

For membership or other information, contact Dr. Jans Muller, Medical Science Bldg., Room A142, 635 Barnhill Drive, Indianapolis 46223—(317) 274-8577 or 8578.

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Desoximetasone

Dexone, Rowell Dexamethasone Tablets, Elixir, Injection

Hexadrol, Organon

DEXAMETHASONE

Glucocorticoid

Decadron, MSD

Generic Name:
Dosage Forms:

Category:
Brand Name:
Generic Name:
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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Magnetic Resonance . . .

CONTINUED FROM PAGES 825-828

- Magnetic resonance imaging involves exposure to:
 - a. x-ray radiation.
 - b. high strength magnetic field.
 - c. intravenous radio pharmaceutical.
 - d. double dose of CT contrastment material.
- Magnetic resonance imaging in MS patients is:
 - a. a technique which can by itself confirm the diagnosis of multiple sclerosis.
 - b. able to differentiate MS plaques from ischemic lesions.
 - a useful and sensitive means of detecting the presence of structural lesions in the brain.
 - d. not capable of following disease progression.
- 3. T1 weighted images provide:
 - a. a very sensitive method for detecting intraparenchymal tissue abnormalities.
 - b. fine anatomical detail of the cerebrum and brainstem.
 - c. a means for quantitating cerebral blood flow.

- d. the best method to document cortical inflammation.
- 4. MRI can currently easily detect MS plaques in:
 - a. spinal cord.
 - b. optic nerves.
 - c. periventricular white matter.
 - d. peripheral nerves.
- 5. Definite MS patients should have all the following except:
 - a. history of demyelinating peripheral nervous system disease.
 - b. clinical relapses and remissions.
 - c. evidence of two or more separate central nervous system lesions.
 - d. evidence of immunologic disturbances as seen by spinal fluid analysis.
- 6. MRI abnormalities in MS:
 - a. correlate with the degree of disability seen on clinical exam.
 - correlate to the suspected anatomical lesion attributed to observed clinical deficit.
 - c. typically are limited to the deep white matter.
 - d. all of the above.
 - e. a and c only.

- Lesions identical to MS can appear on MRI and all the following diseases except:
 - a. encephalomyelitis.
 - b. Huntington's Disease.
 - c. metachromatic leukodystrophy.
 - d. lupus erythematosus.
- . Magnetic resonance imaging:
 - a. is the best imaging technique to demonstrate the lesions of multiple sclerosis.
 - is a useful adjunct to the clinical exam in making the diagnosis of multiple sclerosis.
 - c. is a sensitive, but not specific method for detection of white matter abnormalities.
 - d. all of the above.
 - e. a and c only.
- . MRI relative T-2 weighted images can:
 - a. be useful in assessing biochemistry.
- b. provide sensitive means of detect ing pathologic tissue abnormality.
- c. provide fine anatomical detail.
- d. generally be less sensitive than CT scanning.
- 10. Diagnosis and treatment of multiple sclerosis in the future may be im proved by all the following except:
 - a. use of paramagnetic contrast agents such as Gadolinium.
 - b. more detailed images of spinal cord and optic nerve.
 - c. computerized measurement of plaque size.
 - d. more detailed imaging of the peripheral nervous system.

AUGUST CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the August 1987 issue: "Diabetic Ketoacidosis: Changing Views of Treatment."

1.	d	6.	a	11.
2.	C	7.	b	12.
3.	С	8.	C	13.
4		0	1-	

4. c 9. b 5. b 10. c

Answer sheet for Quiz: (Magnetic Resonance)

 1. a b c d
 6. a b c d e

 2. a b c d
 7. a b c d

 3. a b c d
 8. a b c d e

 4. a b c d
 9. a b c d

 5. a b c d
 10. a b c d

Name (please print or type)

b

C

d

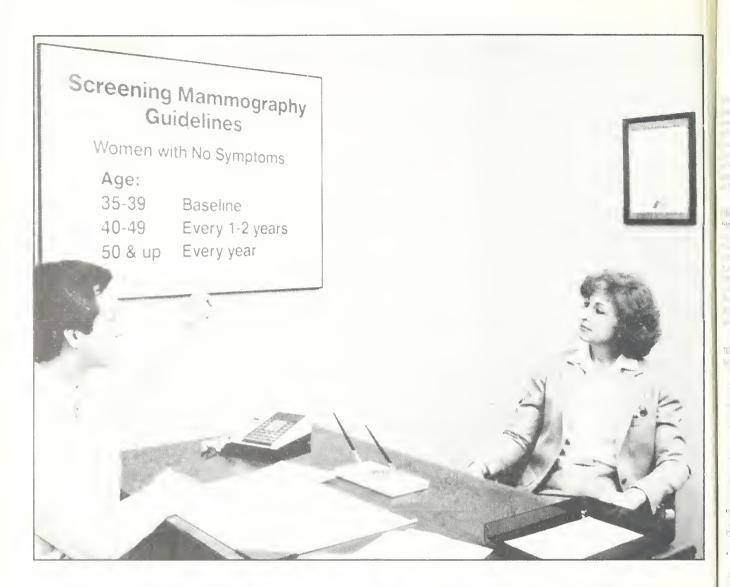
Address

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of Indiana Medicine.

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Oct. 10, 1987 to the address appearing at the top of this page.



What will you tell her about screening mammography?

Many of your patients will hear about screening man mography through a program launched by the American Cancer Society and the American College of Radiclegy and they may come to you with questions. What will you tell them?

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vour regular breast examinations and their monthly self-examinations, offers the best chance of early detection of breast cancer, a disease which will strike one woman in 10

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- 9-R. Adrian Lanning, Noblesville (1989)
- 10-Frank M. Sturdevant, Valparaiso (1988)
- 11 Michael S. Lichner, Logansport (1989) 12-Thomas A Felger, Fort Wayne (1989)

- 13 Alfred C Cox, South Bend (1988) RMS Michael A. Williams, Indianapolis (1987)

AMA DELEGATES (Terms end Dec. 31) Marvin E. Priddy, Fort Wayne (1987) Peter R. Petrich, Attica (1987) Thomas C. Tyrrell, Hammond (1987) Everett E. Bickers, Floyds Knobs (1988) Alvin J. Haley, Carmel (1988). John A. Knote, Lafayette (1988)

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Martin J. O'Neill, Valparaiso (1987) Herbert C. Khalouf, Marion (1987)

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George T. Lukemeyer, Indianapolis (1988)

Robert M. Seibel, Nashville (1988)

DISTRICT OFFICERS AND MEETINGS

- 1-Pres. Gary L. Beck, Evansville Secy: Alan H. Johnson, Evansville Annual Meeting: May 21, 1987, Evansville
- Pres: Charles E. Hendrix, Vincennes Secy: Jerome E. Melchior, Vincennes
- Annual Meeting, 1988 Knox County 3-Pres: Marvin L. McClain, Scottsburg Seev. Annual Meeting 1988
- 4 Pres: Ricardo Domingo, Greenshurg Secy: Cora Gregorio, Greenshurg Annual Meeting, 1988, Greensburg
- Pres. William L. Strecker, Terre Haute Secv: Peggy Sankey Swaim, Rockville
- Annual Meeting Oct. 7, 1987, Terre Haute 6-Pres: William A. Nesbitt, Connersville Secy: Dame! P. Rains, New Castic
- Annual Meeting May 11, 1988 New Castie 7 = Pres: Peter 1, Winters, Indianapolis Secy II Marshall Trusier Indianapolis Annual Meeting: April 1987 Indianapolis
- Pres Joseph Copeland, Anderson Secy Kenneth A Shaver Anderson Annual Meeting June 3, 1987, Portland
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The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

> "for religious, charitable, scientific, literary or educational purposes"

OBITUARIES

Morris B. Paynter, M.D.

Dr. Paynter, 86, a retired physician who had practiced 50 years in Southport, near Indianapolis, died July 9.

He was a 1926 graduate of Indiana University School of Medicine. He retired from practice in 1981.

Dr. Paynter had been a staff member of Methodist, Community and University Heights hospitals in Indianapolis and St. Francis Hospital in Beech Grove. His memberships included the American Society of Family Physicians, the Fifty Year Club of American Medicine and the ISMA Fifty Year Club.

Joseph L. Morton, M.D.

Dr. Morton, 74, a retired Indianapolis radiologist, died July 16 at St. Vincent Hospital.

He was a 1936 graduate of Ohio State University College of Medicine, and was an Army veteran of World War II.

Dr. Morton had been chief of radiology at St. Vincent Hospital from 1955 to 1970. He retired in 1982. He was certified in diagnostic and therapeutic radiology and in nuclear medicine. His memberships included the American College of Chest Physicians, American Roentgen Ray Society, Radiological Society of North America

and the Society of Nuclear Medicine. He became a member of the ISMA Fifty Year Club last year.

Peter Stecy, M.D.

Dr. Stecy, 76, a Whiting physician and surgeon 40 years, died May 31 at his home.

He was a 1937 graduate of Loyola University Stritch School of Medicine and was an Army veteran of World War II

Several years ago, Dr. Stecy was an ISMA delegate representing the Lake County Medical Society. He was a former chief of surgery and chief of staff at St. Catherine Hospital of East Chicago. He also was formerly Lake County coroner and commissioner of the Lake County Board of Health.

Amando L. Baluyut, M.D.

Dr. Baluyut, 69, a Peru urologist, died June 3 at Methodist Hospital, Indianapolis.

He was a 1942 graduate of the University of Santo Tomas School of Medicine, Manila. He had practiced in Peru since 1970.

Dr. Baluyut was a past president of the 11th Medical District and a former secretary-treasurer, Miami County Medical Society. He was a member of the American Urological Association.

Francisco S. Manalo, M.D.

Dr. Manalo, 68, a retired Marion anesthesiologist, died July 2 at St. Vincent Hospital, Indianapolis.

He was a 1945 graduate of the University of the Philippines College of Medicine, Manila.

Dr. Manalo, who retired in 1984, had been in private practice, with staff privileges at Marion General Hospital. He was a fellow of the American College of Anesthesiologists. He also was a member of the American Society of Anesthesiologists and the Indiana Philippine Medical Society.

Boyd A. Burkhardt, M.D.

Dr. Burkhardt, 82, a retired Tipton surgeon, died May 30 at his home.

He was a 1931 graduate of Rush Medical College and was an Army veteran of World War II.

Dr. Burkhardt was a co-founder of the Tipton Clinic, where he practiced 55 years. He also was a founder of the first hospital in Tipton County. His professional affiliations included the International College of Surgeons, the American College of Surgeons and the American Society of Abdominal Surgeons.

Kenneth F. Corpe, M.D.

Dr. Corpe, 75, a retired Rushville surgeon, died July 28 at his home.

He was a 1938 graduate of Loyola University Stritch School of Medicine and an Army-Air Force veteran of World War II.

Dr. Corpe was in private practice and served 35 years as a staff surgeon at Rush Memorial Hospital. He was chief of the medical staff at the hospital before retiring in 1977.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of Indiana Medicine.

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The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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Advertising rates and data available upon request.



ABOUT THE COVER

"The Changing Face of Medicine" is the theme of this year's ISMA convention, to be conducted Nov. 5-8 in Indianapolis. For more information, see the pre-convention section in this issue, beginning on page 965.—COVER DESIGN BY LINDA KAMER

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MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis

THE HONORABLE Oliver Hampton Smith (1794-1859) was a pioneer Indiana lawyer, congressman and U.S. senator. Shortly before his death, he published a book entitled *Early Indiana Trials and Sketches*, a copy of which was recently acquired by the museum.

Written on the flyleaf in pencil is: "W.H. Wishard, Bought April 28, 1858." Below that, in ink, is the name Wm. N. Wishard [son of Wm. H., and for whom Wishard Memorial Hospital at I.U.S.M. is named] from Elizabeth M. Wishard, Oct. 10, 1931."

A card found in the back of the book is addressed: "To the boy of long ago," and it reads: "When this book came into my possession it was almost without any binding. That which it has now is almost an exact reproduction in color and quality, as the lettering on the back is exactly as it appeared in the original. I hope this history of early Hoosierdom may give you many happy hours as you dwell upon the olden golden days. I trust this momentous birthday [his 80th] may be a joyous one, a forecast of a more joyful, serene and contented eventide..."

The following is one of Senator Smith's medical sketches.

ROOT DOCTORS

One morning I was introduced by my landlord to a small, black-eyed man, wearing a plain coat and speaking the plain language of "thee and thou," as Dr. Burr, from New Philadelphia, Ohio, who was about to settle in Connersville, as a root doctor. Some days after, there was nailed up to the weatherboarding of the hotel, an enormous swamp-lily root, almost as large as a man, with head, eyes, nose, ears and mouth nicely carved, arms and legs with feet stuck on, and just above the sign on a board, marked with chalk, "Joseph S. Burr, Root Doctor; No Calomel."

The news of the arrival of the root doctor spread over the country like wild-fire, and hundreds came from all



HON. O.H. SMITH Author of Early Indiana Trials and Sketches

parts of the country to see the doctor and the big root. We had in town at the time a first-rate Allopathic physician, by the name of Dr. Joseph Moffitt, who looked upon the strange root doctor as a quack, intending to gull the people, and spoke of him freely with the utmost contempt, while on the other hand the root doctor openly charged Dr. Moffitt with killing his patients with "calomel".

The people soon began to take sides, some for roots and some for calomel. It was a sickly season and a good many of Dr. Moffitt's patients died; each case of death was referred to by the root doctor as evidence that the calomel doctor was killing the people and many believed the slander. Dr. Moffitt was at length almost driven to despair, and called upon me to bring an action of slander against Dr. Burr; I objected at first, but ultimately yielded at the urgent request of the Doctor.

The action was brought; some five of the first attorneys of the circuit were

engaged on each side. The trial lasted more than a week; the lawyers distinguished themselves, the proof pro and con left the case in doubt in the minds of the jury and bystanders whether the people died "with the fever" or were killed by the "calomel doctors". The widow of a man who had recently died was called as a witness by Dr. Burr. Dr. Moffitt, who sat by me, whispered in my ear, "I have him now; I can prove by a witness in court, that her husband died before I got there." The jury failed to agree and was discharged; the case continued. The root doctor ran away, and the suit was dismissed by Dr. Moffitt at his own proper costs.

The effect of this trial upon the practice of medicine in Fayette county, as well as upon the necessary qualifications to practice, was prodigious. Dr. Burr granted diplomas to his students upon three weeks' study. The country was soon filled with root doctors.

One of his graduates, by the name of Thomas T. Chinn, a constable three weeks before, barely able to write his name, sallied forth with his diploma to the then "new purchase" as Dr. Chinn. "Root Doctor and no Calomel," flung to the public eye upon his new-painted sign hung upon the limb of a tree.

A few weeks after, I met him in the street. "Well, Doctor, how goes the practice?" "Only tolerable; I lost nine fine patients last week, one of them an old lady that I wanted to cure very bad, but she died in spite of all I could do. I tried every root I could find, but she still grew worse, and there being nobody here to detect my practice, like the other regular doctors, I concluded to try calamus, and dug up a root about nine inches long and made tea of it. She drank it with some difficulty, turned over in the bed and died. Still, I don't think it was the calamus that killed her, as all the Calamus doctors are giving it in heavier doses than I did.

Such was his ignorance that he knew no difference between calomel and calamus, and yet he got patients.



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MHAT'S NEWS

Ilewlett-Packard introduces a personal-computer-based ECG management system that offers an economical solution for fast storage, editing and retrieval of ECG records in clinics and small hospitals that process fewer than 10,000 ECGs per year. The new work station is HP 43610A.

Oncor, Inc. announces the first commercially available probe-based test to detect the genetic component of the AIDS virus. The test, known as ConfirmAIDS, uses nucleic acid (RNA) probes to directly detect the presence of HIV-I, the AIDS virus, in white blood cells. The probes enter the patient's isolated white blood cells and combine with the AIDS virus, which can then be observed through a light microscope.

A new decorated sweatshirt for nurses is announced by Straight Status. A high quality bright white 50% cotton-50% acrylic long sleeve sweatshirt, in small, medium, large and extra-large sizes is decorated with the Straight Status nurse bear and the motto TLC.

Dornier Medical Systems will install its biliary lithotripter in 10 U.S. medical centers, including the Methodist Hospital in Indianapolis. Every patient contemplating lithotripter treatment for gallstones should be informed that, if the lithotripter shatters the stones and if the shattered debris passes out through the common bile duct, the absence of stones will be temporary. When gallstones are removed surgically from the gall bladder and, if the gall bladder is left in place, the stones will reform within a few years. This happens because the chronic inflammation in the gall bladder wall is the lesion which causes stone formation. Unless the lithotripter cures the chronic inflammation the stones will recur. Patients who are normal surgical risks should be treated by cholecystectomy. The gall stone lithotripter may be found to be a good treatment for patients who are not good risks for surgical operations.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by Indiana Medicine or by the Indiana State Medical Association.

Midmark is introducing a new Midmark 413 Female Procedures Chair. It is a power chair which easily converts to a pelvic exam table with special foot supports. The chair arms unlock quickly and may be removed entirely or locked into two support positions. When in table position the Trendelenburg position is possible. All upholstery sections pull off for easy cleaning.

Alpha Omega Technology, Inc. (AOT) has a Quality Assurance and Risk Management program which is easily implemented in a group medical practice and/or small office environment. Benefits include reduction in actions that cause malpractice suits and the introduction of patient management systems which stress documentation and safety. AOT, on a regular basis, will monitor and calibrate all devices and document all settings and procedures. AOT also will analyze relevant cases and settlements to identify common themes and causality; work with sponsoring health care associations on "Standard of Care"; and initiate patient management programs.

Hewlett-Packard has introduced a new dome that increases the advantages of reusable transducers for direct blood-pressure monitoring. Reusable transducers are durable and cost less per use than disposable transducers. When paired with the new HP 1295D flow through dome, reusable transducers also allow fast and simple setup. The HP 1295D dome was designed specifically for the HP 1290 series QuarTz transducers.

The National Committee for Prevention of Child Abuse has published a 16-page pamphlet, "Physical Neglect." The author, Hendrika Cantwell, M.D., a physician at the Family Crisis Center in Denver, has filled the booklet with homey hints on good parenting and warns gently but firmly of the hazards of physical neglect. "Treatment Programs for Abused Children" emphasizes that treatment of abused children must involve both parents and children and must strive to correct flawed relationship patterns between them.

Aquaflex Systems has devised a variable weight for rehabilitation and exercise purposes. It is a flexible, collapsible device which may contain water in varying amounts up to six pounds. It will drain and fold flat. May be stored easily and may be carried on trips. Any desired weight may be accomplished according to a scale on the device to indicate the weight of water added.

Colwell Systems, Inc. announces its '88 aging labels. These bright red, self-adhesive labels can be wrapped around the side edge of a shelf-type folder or over the top of a drawer-style folder for maximum visibility. Attach an aging label the first time a file is accessed in 1988. Then years later, when it comes time to purge office files, a quick glance determines which records to pull. The '88 aging labels measure 1" x 1/2" and are delivered flat in quantities of 1,000 labels per box.

Dosimeter Corporation's SuperDAD digital alarming dosimeter is designed to help keep worker exposures As Low As Reasonably Achievable (ALARA) with features that include: a 3-digit LCD with a range of 0-9999 mR (Model 1888A) or 0-99.99 mSv (Model 1888ASv); an audible chirp for each 1 mR (or 0.01 mSv); an accumulated exposure alarm presettable from 10 mR to 9900 mR (0.1 mSv to 99 mSv); and an exposure rate alarm presettable from 100 to 900 mR/hr and 1 to 9 R/hr (1-9 mSv/hr; 10-90 mSv/hr).

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FUTURE FILE

Medical-Legal Issues

"Current Medical-Legal Issues in Indiana" will be the subject of the 5th annual SIMBA South seminar, to be held during spring break (March 28-April 1, 1988)

The seminar is offered by Seminars for Indiana Medico/Legal Bar Association (SIMBA), Indianapolis. Faculty will include well known Indiana physicians and attorneys. Tuition is \$350. CLE and CEU credits can be earned.

For more information, call (317) 871-6222 or write SIMBA South V, 8402 Harcourt Road, Suite 220, Indianapolis 46260.

Tuberculosis Update

A tuberculosis update conference will be conducted Jan. 27-28 at the Radisson Plaza Hotel, Indianapolis.

The conference is aimed at physicians specializing in pediatrics, geriatrics, pulmonary diseases, family practice and infectious diseases. It is being sponsored by the American Lung Association of Indiana and the Indiana Thoracic Society. AMA CME credit will be available.

For more information, contact the ALA of Indiana, 8777 Purdue Road, Suite 310, Indianapolis 46268—(317) 872.9685.



Health Care Management

The National Institute on Health Care Leadership and Management will meet Nov. 17-20 at the Westin La Paloma, Tucson, Ariz. 14-28 credits (2- and 4-day courses).

Contact Sherry Mason, American Academy of Medical Directors, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609 – (813) 873-2000.

Adolescent Injuries

The AMA will present a conference on "Unintentional Injuries to Adolescents" Nov. 6-8 at the Westin Hotel, Chicago. Registration is \$225 for AMA members, \$275 for others.

For details, contact Alan L. Engelberg, M.D., Dept. of Public Health, AMA, 535 N. Dearborn, Chicago 60610.

Allergy Conference

A CME Conference and Medical Exhibition will be held Oct. 30-31 at the Hilton-at-the-Circle in Indianapolis. It is being co-sponsored by the Ohio Valley Allergy Society (OVAS) and the American Academy of Allergy and Immunology. It carries up to five hours of Category 1 credit.

For registration or membership information, contact OVAS, P.O. Box 34347, Indianapolis 46234 – (317) 846-1233.

Primary Care Update

A Primary Care Update, the 72nd Scientific Assembly of the Interstate Postgraduate Medical Association, will be held Nov. 2-5 at the Diplomat Resort in Hollywood, Fla.

The program will concentrate on six areas of medicine, with emphasis on the problems that the primary care physician meets in day-to-day practice.

Program and registration materials are available from the Association at P.O. Box 1109, Madison, Wisc. 53701.

Indiana University CME

Oct. 21: AIDS Symposium; Lincoln Hotel and University Conference Center, Indianapolis.

Oct. 24-25: Advanced Trauma Life Support; Wishard Memorial Hospital, Indianapolis.

Nov. 5: Gastroenterology: An Update.

Nov. 6: Gynecologic Problems of the Young Female; Vigo County Public Library, Terre Haute.

Nov. 12-13: Garceau-Wray Lectures; Wishard Memorial Hospital, Indianapolis.

Nov. 13-14: American College of Physicians, Indiana Chapter scientific session; Hyatt Regency, Indianapolis.

Nov. 19: Vascular Disease: What the Primary Care Physician Needs to Know; Reid Memorial Hospital, Richmond.

Nov. 19-21: Laser Surgery; I.U. School of Medicine, Indianapolis.

Dec. 11: Indiana Classic Otolaryngology Conference; Bloomington Memorial Union, Bloomington.

For more information, call Melody Dian, CME, I.U. School of Medicine—(317) 274-8353.

Fetal Monitoring

An eight-hour Advanced Fetal Monitoring Workshop will be conducted Wednesday, Nov. 11, at Humana Women's Hospital, Indianapolis. The guest speaker will be Barry S. Schifrin, M.D., a pioneer in fetal monitoring.

For more information and to register, call Debbie Mingus at (317) 872-1802.

Pathology

The annual meeting of the U.S. and Canadian Academy of Pathology will be held Feb. 28 to March 4, 1988, at the Washington Hilton, Washington, D.C.

For more information, contact Dr. Nathan Kaufman, Bldg. C, Suite B, 3515 Wheeler Road, Augusta, Ga. 30909—(404) 733-7550.

DNA Probes

The AMA's second conference on "DNA Probes in the Practice of Medicine" will be presented Nov. 13-14 at the Bonaventure Hotel, Los Angeles. The conference is designed to give physicians and clinical researchers a better understanding on how DNA-based diagnostics are being applied in their specialty fields.

Registration is \$225 for AMA members, \$275 for non-members. Contact R. Mark Evans, Ph.D., Office of Biotechnology, AMA, 535 N. Dearborn, Chicago 60610.

Neurology Seminar

60612 - (312) 942-7095.

"Neurology for the Non-Neurologist" will be conducted Dec. 9-11 at the Westin Hotel in Chicago. Contact: Office of CME, Rush University, 600 S. Paulina, Chicago

Pulmonary Rehabilitation

The International Conference on Pulmonary Rehabilitation and Home Mechanical Ventilation will be conducted March 2-5, 1988, at the Marriott Hotel, City Center, Denver, Colo.

Contact Webb-Waring Lung Institute, 4200 W. 9th Ave., Box C-321, Denver 80262 – (303) 394-8231.

The Journal of the American Medical Association publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Clinical Cytopathology

The Johns Hopkins University School of Medicine announces the 29th Annual Postgraduate Institute for Pathologists in Clinical Cytopathology. This is designed as a subspecialty residency in clinical cytopathology.

Study is compressed into 152 AMA Category 1 credit hours in two courses, both of which must be taken:

From February through April 1988, Home Study Course A is provided registrants for personal reading and microscopic study at their own laboratory in preparation for Course B; and

From April 25 to May 6, 1988, In-Residence Course B is an extremely concentrated lecture series with intensive laboratory studies and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore.

For details, write John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205.

Trauma Symposium

The 35th Annual Detroit Trauma Symposium will be conducted Nov. 6-7 at the Kresge Auditorium, Harper Hospital, 3990 John R, Detroit. It is being sponsored by the Dept. of Surgery, Wayne State University, and is approved for nine hours of AMA Category 1 credit.

Contact Marjorie Norum, Dept. of Surgery, Harper Hospital — (313) 745-2345.

Geriatrics

"Clinical Problems in Geriatrics" is the title of a CME course to be held Dec. 11-12 at the Concourse Hotel, Madison, Wisc. AMA Category 1 and AAFP credit: 12 hours.

The correspondent is Sarah Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705-(608) 263-2856.

Pain Seminar

Community Hospitals Indianapolis will conduct the First Annual Pain Seminar Friday, Nov. 13, at the Radisson Plaza Hotel, Indianapolis.

For more information, contact Carolyn Roeder, Medical Education, Community Hospitals Indianapolis—(317) 353-4269.

IT'S NOT TOO LATE!

Plan to attend the 138th Annual Convention of the Indiana State Medical Association November 5-8, 1987 Reservation deadline: October 15

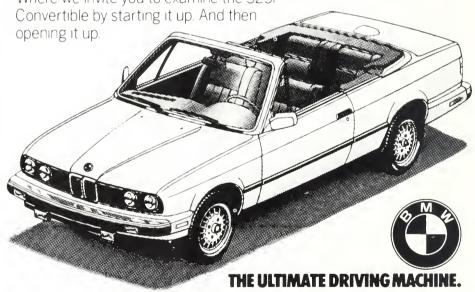
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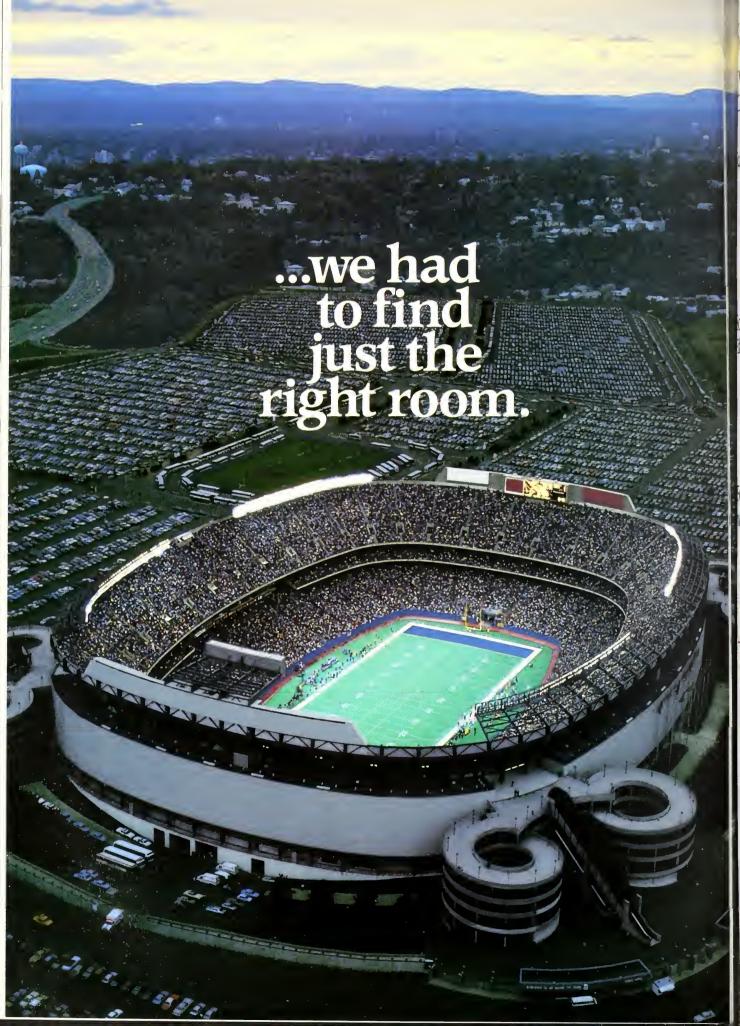
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A recent double-blind, placebo-controlled, crossover study in 138 hypertensive patients² revealed that INDERAL LA has a side effects profile unsurpassed by atenolol or metoprolol—which shows how well-tolerated once-daily INDERAL LA can be.

Sole therapy or concomitant therapy? Fifty-nine percent of the time, INDERAL LA stood on its own.

The patients in the nationwide compliance trial were no different from yours. Generally when the antihypertensive regimen is complicated, compliance may become a problem. So, the effectiveness of INDERAL LA as once-daily monotherapy is a big plus. Of the remaining hypertensives in the program, 36% were treated merely with the addition of a diuretic to INDERAL LA.

For the noncompliant patients in your practice, INDERAL LA may well be the answer.

Almost 20,000 of the patients in the nationwide compliance trial were identified as having been noncompliant with their previous antihypertensive therapy. Their physicians reported that 88% showed improved compliance when placed on once-daily INDERAL LA.

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CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock 2) sinus

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INDERAL LA

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WARNINGS. CARDIAC FAILURE Sympation of the property of the pro

partin uscle IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers James asses lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and or treated with diuretics, and the response observed closely or NOERAL should be discontinued (gradually if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of IN PATIENTS WITH ANGINA PECTORIS there have been reports of evacerbation of angina and in some cases impocardial infarction following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned, the dosage structure of the patient should be authorized against interruption or cessation of therapy without the physicians advice if INDERAL therapy sinterrupted and evacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary afterly disease may be unecognized it may be prudent to follow the above advice in patients considered at risk of having occult atheroscierotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg. chronic bronchitis, emphysema). PATIENTS

WITH A MICHOLSPASSIDE DITAGES WHOULD IN GENERAL NOT RELEIVE BETA BLICKHES INDEPALS should be administered with caution since imay block bronchool along Prinklered by prindugenous and exogenous catecholamine stimulation of beta receptors MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy printing in urgery. Londroversial It is should be noted however that the impaired ability of the searth respond to reflex adrenergic stimuli may augment the risks of general anesthesia and

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PRECAUTIONS. 3 NERAL Pri prando should be used with caution in patients with impair in the all unction INDERAL (proprandio HCI) is not indicated for the treatment of

Beta-adrenure eptor ribukade can cause reduction of intraocular pressure. Patients should

be to d that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead return of increased infraocular pressure CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe hi

disease elevated serum transaminase alkaline phosphatase, lactate debrydrogenase DRUG INTERACTIONS. Patients receiving catecholamine-depieting drugs such as repine should be closely observed if INDERAL is administered. The added catecholam blocking action may produce an excessive reduction of resting sympathetic nervous activition may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthost hypotension.

Caution should be exercised when patients receiving a beta blocker are administere calcium-channel-blocking drug especially infravenous verapamil for both agents may press myocardial contractility or afrioventricular conduction. On rare occasions, the concu-tant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactic especially in patients with severe cardiomyopathy congestive heart failure or recent myor dial intarction.

Alumnum hydroxide gel greatly reduces intestinal absorption of propranolol Ethanol slows the rate of absorption of propranolol Phenytoin, phenobarbitone and rifampin accelerate propranolol clearance

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propranolol Thyroxine may result in a lower than expected T_3 concentration when used concomital

with propranolo

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination a increasing blood levels

Theophylline clear, ince is reduced when used concomitantly with propranolol CARCINOGENESIS MUTAGENESIS IMPAIRMENT OF FERTILITY Long-term studies animals have been conducted to evaluate toxic effects and carcinogenic potential. In month studies in both rats and mice, employing doses up to 150 mg/kg day, there was evidence of significant drug-induced toxicity. There were no drug-related turnorigenic effect at any of the dosage levels. Reproductive studies in animals did not show any impairment of the dosage levels.

at any of the dosage levels. Reproductive studies in animals did not show any impairment fertility that was attributable to the drug. PREGNANCY Pregnancy Category C. INDERAL has been shown to be embryotoxic animal studies at doses about 10 times greater than the maximum recommended human doron there are no adeguate and well-controlled studies in pregnant women. INDERAL should used during pregnancy only if the potential benefit justifies the potential risk to the fetus NURSING MOTHERS. INDERAL is excreted in human milk. Caution should be exercis when INDERAL (propranoid HC) is administered to a nursing woman. PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rare

ured the withdrawal of therapy ardiovascular Bradycardia congestive heart failure, intensification of AV block, hypote paresthesia of hands: thrombocytopenic purpura, arterial insufficiency, usually of t

Central Nervous System Light-headedness, mental depression manifested by insomn Central Nervous System Light-headedness, mental depression manifested by insominassitude weakness fatigue reversible mental depression progressing to catatonia, visu disturbances hallucinations vivid dreams an acute reversible syndrome characterized lidisorientation for time and place, short-ter memory loss emotional lability, slight clouded sensorium, and decreased performance on neuropsychometrics. For immedia formulations, fatigue, lethargy and vivid dreams appear dose related.

A 120 LA 160 Castrontestinal Nausea, vomitting, epigatic distress, abdominal cramping, diarrhe constipation, mesenteric arterial thrombosi ischemic politis.

ischemic colitis

Allergic Pharyngitis and agranulocylosi
erythematous rash, fever combined with ac ing and sore throat laryngospasm and respir tory distress Respiratory Bronchospasm

Hematologic Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpur Auto-Immune In extremely rare instances systemic lupus erythematosus has bee

Miscellaneous Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotenci and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involvin the skin-serous membranes and conjunctivae reported for a beta blocker (practolol) have no

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in sustained-release capsule for administration once daily if patients are switched from INDERA Tablets to INDERAL LA Capsules, care should be taken to assure that the desired therapeutil effect is maintained. INDERAL LA should not be considered a simple mg-for-mg substitute for INDERAL INDERAL LA has different kinetics and produces flower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval HYPERTENSION — Dosage must be individualized. The usual initial dosage is 80 minDERAL LA once daily, whether used alone or added to a durette. The dosage may be increased to 120 mg once daily or higher until adeguate blood-pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 64 mg may be reguired. The time needed for full hyperfensive response to a given dosage is anotic maintenance dosage must be individualized. Starting with 80 mg INDERAL Lonce daily dosage should be gradually increased at three- to seven-day intervals until optima response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

Iltreatment is to be discontinued, reduce dosage gradually over a period of a few weeks (set WARNINGS). DOSAGE AND ADMINISTRATION, INDERAL LA provides propranolel hydrochloride in

If freatment is to be discontinued, reduce dosage gradually oral dose is 80 mg INDERAL Lf warming and in the usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is no obtained within four to six weeks after reaching the maximal dose. INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of severa

TYPERTROPHIC SUBAORTIC STENOSIS — 80-160 mg INDERAL LA once daily PEDIATRIC DOSAGE — All this time the data on the use of the drug in this age group are too limited to permit adequate directions for use

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Ravid M, Lang R, Jutrin I. The relative antihypertensive potency of propranolol, exprenolol atenolol, and metoprolol given once daily. Arch Intern Med 1985, 145 1321-1323.



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Split-Course and Palliative Radiation Therapy in Non-Small Cell Lung Cancer

JOSEPH F. MONTEBELLO, M.D. Indianapolis PATIENTS WHO require local palliation of advanced non-small cell lung cancer, an alternative to protracted conventional fractionation is the use of split-course irradiation. Split-course irradiation generally implies a high dose per fraction treatment schedule during a short time period followed by a rest period of two or three weeks. This, in turn, is succeeded by a second course of irradiation.

There are certain theoretical advantages to split-course irradiation. High biological doses having a more prominent effect on fully oxygenated cells are usually delivered. This allows the hypoxic cells of the tumor to reoxygenate as the more sensitive oxygenated cells are destroyed and no longer compete for oxygen available in the tissues. The rest period allows tumor shrinkage which may permit the therapist to reduce the size of the

treatment field and thereby spare more normal lung. For treatment centers with large patient loads, splitcourse irradiation is a more economical approach, although this should not be the deciding factor.

In addition, this modality facilitates the combination of chemotherapy with radiation. Perhaps most importantly, following the first course of treatment and rest period, the extent of the disease may be reassessed so that patients who deteriorate or develop metastatic disease can be spared the morbidity of additional irradiation. Conversely, those patients who do respond may then receive the second course.

In 1965, S. Levitt, *et al.* reported 18 patients with locally advanced lung cancer and mediastinal symptoms treated with split-course irradiation. (See *Table 1.*) This treatment schedule

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Continuous	Versus	Split-Course	Therapy

Author	Year	Regime Split	continuous	# of p Split		Mean/Med Split	Surv Cont	1-year s Split	Cont	2-year Split	Surv Cont	3-year Split	Surv Cont	5-year : Split	Surv Cont
e* 1	1 1651	800 ay 3 fx 0.1.28 day 1800 Gy 3 fx		1 1	†1	6 3 mo	6 0	_	-		-	_	_	-	-
Abras .or 1. and Cavana.go P	19/1	2000 Gy 5 tx 150 3 Wk 2000 Gy 5 tx		42	42			43%	$14\omega_i$					-	-
Ablam on 1. and Cavan augr P	1973	2000 Gy 5 fx 1 % 3 wk 2000 Gy 5 fx		271				3800						6/8% (4 yr s	
Anstrada and Caldwe Wil	1476	5500-6000 Gy 20-24 th 3. or 7.8 wk. with 2.4 wk rest in middle		1 J4 micalized we diffe gg advance anap astr	r). d						19 ^a .			16%	
bergar () et a″	2976	5000 7000 r Gy .1 &k 250 r Gy × 10 150 r Gy × 1 . &k 400 Gy × 5	4000 6000 cGy 4000 Gy 20tx 4500 Gy 23t+	59	10,	e -, mu	7 7 mo	46%	35%		1900 yearsi				

consisted of 1800 eGy in three fractions followed by a second course of 1800 eGy after a 28-day rest. Eleven patients completed the course and had a mean survival of 5.7 months.

A randomized study was then conducted comparing such split-course irradiation of 14 patients with conventional irradiation (6000 cGv in six weeks) in 11 patients. Eleven of the 14 split-course patients completed therapy and had a mean survival of 6.3 months. Seven of 11 of the conventionally irradiated patients completed their course of therapy and had a mean survival time of 6.0 months. In this report and in a subsequent update with additional patients in 1967, no significant difference in the relief of symptoms or in the duration of symptom relief appeared between the two groups.1.

In 1970, N. Abramson, et al. compared the effects of 6000 cGy in 30 frac-

tions given over six weeks to 42 patients with locally advanced lung cancer to those of 2000 cGy administered in five fractions during one week, followed by a rest for three weeks and another course of 2000 cGy given to a second group of 42 similar patients. After one year, the survival rate for the continuous dose irradiation group was 14% but it was 43% for the split-course irradiation individuals. The authors noted no difference in the quality of symptomatic relief between the two regimens.

These same authors reported in 1973 additional experience with 271 patients and split-course irradiation. They observed a one-year survival rate of 38.1% and a survival rate of 6.8% after four years.

S. Aristizabal and W. Caldwell described a five-year survival rate of 16% for individuals with limited lung cancer treated with a split course of

5500 to 6000 cGy in seven to eight weeks, including a rest period of two to four weeks between courses. For those with more advanced lesions, however, the researchers had no four-year survivors.

O. Salazar, et al. reported on 200 lung cancer patients, of whom 160 completed treatment. Of these individuals, 101 were placed on one of four different continuous therapy schedules and the remaining 59 patients followed one of three different split-course schedules.

The median survival period was 11.5 months for those who received split-course irradiation and 7.7 months for those placed on continuous courses. Eighteen-month survival rates for conventional irradiation and split-course irradiation were 19% and 31%, respectively. These were statistically significant at P < 0.05.

However, when Salazer analyzed the nominal standard dose (NSD), no

statistical difference appeared among the patients receiving doses in excess of 1469 rets. These patients had a median survival period of 10-12 months. All 59 patients in the split-course schedules received more than 1650 rets. Sixteen of the 101 patients in the continuous dose groups received doses less than 1469 rets. This latter group had a median survival period of only 3.9 months. 6,7,8

In 1980, L. Holski and K. Mattson reported on 363 patients randomized either to 5000 cGy in five weeks (158 patients) or to 5500 cGy in seven to eight weeks conventional fractionation with a rest period of two to three weeks halfway in the course (205 patients). No significant differences were observed in terms of survival rates with nine survivors at five years in the continuous course group versus five survivors in the split-course group. In addition, no difference in local recurrence or the frequency of metastasis appeared between the two groups.⁹

N. Choi and J.A. Doucette in 1981 summarized the experience of 28 patients treated with split-course irradiation. These researchers noted no significant improvement in the survival rate of these patients as compared to other individuals receiving the same biologic dose by continuous irradiation.10 Similarly, K. Shah, et al. in 1981 reported no significant difference in two-year survival rates between 5000 cGy of continuous irradiation as com pared to 6000 cGy in a split course. Although, a 4000 cGy split course produced a poorer two-year survival rate than the other regimens.11

The Radiation Therapy Oncology Group (RTOG) found no superiority of split-course irradiation. Indeed, a slight increase in complications with split-course therapy appeared as compared to 4000 cGy and 5000 cGy continuous irradiation. However, complications were roughly equivalent in the 6000 cGy continuous irradiation and the split-course irradiation groups.¹²

In 1983, H. Katz and R. Alberts reported on 115 patients who had

TABLE 2 Symptomatic Response in 330 Patients*

Hemoptysis Arm and Shoulder Pain Chest Pain	84% 73% 61%
Atelectasis	23%
Superior Vena Caval Syndrome	86%
Vocal Cord Paralysis	6%
Arthralgia	$100\mathrm{^{0}\!/o}$
Dyspnea	60%
TOTAL SYMPTOMATIC	
RELIEF	61%

^{*}Adapted from Slawson RG, Scott RM: Radiation therapy in bronchogenic carcinoma. *Radiology*, 132:175-176, 1979.

received continuous irradiation of 6000-6500 cGy at 180-200 cGy per day. The outcomes of these individuals were compared to those of 56 patients who received 5500 cGy at 250-300 cGy per day of split-course irradiation which included a two-week break. No difference in survival rates between the two groups (6% after five years) was evident.

Split-course therapy, despite its theoretical biological advantages, has not surpassed continuous dose irradiation in terms of survival rates. On the other hand, split-course irradiation does not appear to be less effective than continuous irradiation.

Most lung cancers seen by the radiation oncologist are locally advanced. Five-year survival rates range from 5-10% in most series. Certain patients may commence therapy with palliative objectives with a substantial improvement justifying a radical dose. Those who continue to deteriorate may be spared a protracted radiation course during the remainder of their life.

Careful attention to technique is necessary to ensure adequate tumor coverage as well as to minimize normal tissue damage. With adequate treatment planning, high doses may be delivered to the primary tumor and nodal sites. Damage from excess irradiation to the lungs, heart, or spinal cord may lead to severe morbidity or fatality. This important consideration necessitates careful treatment planning when employing a high dose per fraction.

Palliative Irradiation

What constitutes curative irradiation and palliative irradiation is sometimes not obvious. However, palliative irradiation should be delivered with no less care than curative irradiation. The total dose and length of treatment may be different. For nondisseminate, inoperable lung cancer, radiation is the only chance for cure, although the fatal course of the disease is not stopped in most instances.

However, certain specific symptoms can be effectively palliated with radiation. In 1979, R. G. Slawson and R. M. Scott reported on 476 symptoms in 330 patients. Hemoptysis and superior vena cava syndrome, which are the most lifethreatening, demonstrated a response rate of over 80% to irradiation.¹⁴

Patients receiving a "radical palliative" course of irradiation (either in a continuous course of 6000 cGy in six weeks or in a split-course fashion of 3000 cGy in two weeks with a two-week break followed by an additional 2500 cGy in two weeks) exhibited the best response rate. In the continuous radiation group, 67 of the patients improved and 71% of the patients receiving split-course irradiation responded.¹⁴

Patients receiving lower doses noted less of a response rate. Of those patients receiving 2000 cGy in one week or 3000 cGy in two weeks, 41% showed symptomatic improvement. Ten of 30 patients given 1500 cGy daily for five treatments and three of 10 patients given one to three fractions of 800 to 1000 cGy at weekly intervals also responded. (See *Table 2*)

Conclusion

Patients with locally advanced carcinoma of the lung have a dismal outlook. Radiation may result in a cure; however, the overwhelming majority of individuals will die of their disease. In order to curb unduly prolonged therapy and radiation morbidity for patients who would not benefit from radiation, split-course irradiation was developed. Most studies support the view that split-course irradiation has no less potential for cure than the more protracted conventional therapy if the same biological dose is given.

Radiation is a very powerful modality for the palliation of symptoms produced by lung cancer. Hemoptysis and superior vena cava syndrome will respond in over three quarters of cases. A dose-response phenomenon does appear to exist; and, a response to therapy depends more upon the biological dose than the method of delivery of irradiation.

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Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PII. Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmaeist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors. Category: Brand Name:

Generic Name: Dosage Forms:

Category: Brand Name: Generic Name: Dosage Forms: TRILOSTANE

Adrenal sterid inhibitor
Modrastane, Winthrop
Breon
Trilostane

Analgesic
Trilistate,
Frederic
Combinati

Trilostane Capsules

TRETINOIN Acne

Retin-A, Ortho Tretinoin Cream, Gel, Liquid TRILISATE

Analgesic Trilistate, Purdue Frederick Combination drug Tablets, Liquid

TRIENTINE

Chelating agent Cuprid, MSD Trientine HCl Capsules

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An Evaluation of Sucralfate in the Treatment of Peptic Ulcer Disease

A 'Clinical Real Life Study' of 54 Patients in Indiana

WILLIAM D. PROVINCE II, M.D. Franklin, Ind. RAFIK S. FARAG, M.D. Peru. Ind.

ESPITE A DECLINE in incidence and prevalence since the beginning of this century, duodenal peptic ulcer disease remains a common disorder.1,2 No clear explanation has yet been put forth to account for these trends, and their significance remains uncertain; however, authorities estimate that as many as 10% of American men will suffer from duodenal ulcer disease at some time during their life.3 Interestingly, the decline in incidence of peptic ulcer disease has occurred almost exclusively in men; the incidence among women remains essentially unchanged.2 At the turn of the century, the male:female ratio among patients with duodenal ulcer disease was almost 5:1; currently, the ratio is less than 2:1.2

Major advances in the physician's ability to treat peptic ulcer disease have occurred simultaneously with the

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Wayne, Ind.; and J. N. Tord, M.D., Indiana-

decline in incidence. At present, the only agent approved for use in the United States that enhances tissue protection is sucralfate. Sucralfate (CARAFATE®, Marion Laboratories, Kansas City, Mo.) has been shown to bind to ulcer bases and may have a direct barrier-type protective effect, although this mechanism does not explain all of the drug's beneficial effects.

To date, the clinical trials documenting the efficacy and safety of the pharmacologic agents, both approved and experimental, used in the treatment of peptic ulcer disease have been carried out by experienced investigators with university affiliations. The patients involved in such studies were drawn from patient pools found at these tertiary centers. Therefore, reported results are not necessarily representative of the larger, "real life" clinical experiences of office-based practitioners with little or no research training, who treat patients in the community.

The "clinical use-experience trial" or "Clinical Real Life Study" that forms the basis of this communication was designed to provide information on the efficacy and safety of the antiulcer agent sucralfate. It was carried out in the setting of physicians' private practices in the state of Indiana. We believe that it represents one of the first studies of this kind and that it is the first "real life" evaluation of an antiulcer agent. We further believe that the results of this trial will be useful to other practitioners in Indiana in their daily clinical experience.

Methods

Study design. Ambulatory patients with clinically diagnosed duodenal peptic ulcer disease were entered into this prospective, multicenter, open-label study to evaluate the efficacy and safety of sucralfate. Patients received sucralfate for eight weeks. Therapeutic response was determined by resolution of symptoms of peptic ulcer disease and/or by objective evidence of ulcer healing, as determined by endoscopy or radiography.

Diagnostic criteria. The clinical diagnosis of duodenal peptic ulcer disease was primarily based on symptomatology. The following criteria were used:

- 1. Location: Epigastric pain near the midline, with minimal radiation
- 2. Character: Burning, gnawing, aching
- 3. Pain relief: Pattern of relief of discomfort by ingestion of food or antacids
- 4. Temporal relationships: Pain typically occurring several hours after meals or at night, but rarely in the early morning; pain exacerbated by stress or fasting

In patients without this typical symptom complex, the following diagnostic criteria were used:

- 1. Endoscopic demonstration of duodenal peptic ulcer
- 2. Radiographic demonstration of duodenal peptic ulcer
- 3. In patients with previous objective diagnosis of duodenal peptic ulcer disease, recurrence of symptoms typical to that patient

polis.

TABLE 1	
Incidence of Ulcer Symptoms	in
54 Patients in Indiana	

Symptom	N	0/0
Pain	46	85.2
Abdominal bloating	40	74.1
Belching	40	74.1
Nausea	38	70.4
Regurgitation of sour		
burning fluid	34	63.0
Flatulence	28	51.8
Decreased appetite	26	48.2
Intolerance to		
fatty foods	23	42.6
Constipation	11	20.4
Vomiting	10	18.5
Increased appetite	10	18.5
Diarrhea	10	18.5
Hiccups	7	13.0

Inclusion criteria. Men and women of any race aged 18 or older and receiving no antiulcer therapy other than antacids were eligible for enrollment. Patients receiving other antiulcer therapy became eligible 48 hours after discontinuation of the previous medication.

Exclusion criteria. Patients with any of the following clinical conditions were excluded from this study: (1) Zollinger-Ellison syndrome, (2) major surgery, trauma, or burns within three months of study entry, (3) serious active hematologic, oncologic, renal, hepatic, cardiac, or endocrine disorders, or (4) active alcoholism or other substance abuse. Pregnant women, nursing mothers, and patients whose requirements for concomitant medication (see below) precluded enrollment were also excluded.

Concomitant medication. Patients with concurrent stable disease processes were allowed to receive therapy as needed with the following stipulations: In patients receiving ulcerogenic therapy (i.e., aspirin or nonsteroidal, anti-inflammatory agents), discontinuation of these drugs was desirable during the course of the study. If this was not possible, these drugs were ad-

ministered about one half hour after sucralfate.

Concomitant therapy with antisecretory agents was not allowed during this study. Antacid therapy was administered as necessary for temporary relief of pain. These agents were not administered during the one half hour before or after sucralfate.

Study protocol. Upon enrollment in the study, a thorough history and physical examination was performed, with emphasis on the gastrointestinal system and the nature, frequency, and severity of peptic ulcer symptoms. In addition, an extensive evaluation of the patient's demographic characteristics was conducted.

Patients were begun on sucralfate in a dosage of 1 g orally four times a day, taken on an empty stomach. Guidelines for coffee and alcohol consumption and dietary modification were at the discretion of the investigator, based on clinical data obtained upon enrollment.

Repeat evaluations were performed after four weeks of therapy and again after eight weeks, if necessary. At the conclusion of the study, patients could be continued on sucralfate or changed to an alternative regimen at the discretion of the investigator.

Study endpoints. The patient's therapeutic response was classified as one of the following:

- 1. Symptoms resolved after four weeks, no further assessment needed
- 2. Symptoms persistent at four weeks, but resolved at eight weeks
- 3. Symptoms persistent at four and eight weeks

Study sites. Since symptomatic duodenal peptic ulcer disease in ambulatory patients is typically a primary health care situation, clinical practitioners who had completed a continuing medical education program on peptic ulcer disease conducted by the University of California were recruited to enroll patients in this study. Each practitioner was familiarized with the study protocol and was provided with case report forms. The completed

TABLE 2 Age Distribution of Ulcer Patients in Indiana

Age group	N	0/0
18-30	8	14.8
31-40	4	7.4
41-50	14	26.0
51-60	12	22.2
61-70	6	11.1
71 or greater	10	18.5
Not Specified	0	0
Total	54	100.0

TABLE 3
Race Distribution of Ulcer Patients
in Indiana

Race	N	0/0
Caucasian	49	90.7
Black	4	7.4
Latin American	1	1.9
Asian	0	0
Other	0	0
Not Specified	0	0
Total	54	100.0

forms were sent to an independent, central computer processing unit for statistical analysis.

Results

Overall, 54 patients were enrolled in this study by seven physicians. The average number of patients enrolled per physician was eight. The study group contained 27 men and 27 women (50% each).

The most common presenting symptom was pain, occurring in 46 patients (85.2%). Other ulcer symptoms reported by patients in this study are shown in *Table 1*. They ranged in incidence from 13.0% for hiccups to 74.1% for abdominal bloating.

The age distribution for the study group is shown in $Table\ 2$. It is important to note that each age group is represented equivalently in the data base, i.e., there was no significant difference in the number of patients in each age group. The racial distribution of study patients is shown in $Table\ 3$,

showing a majority of Caucasian patients.

The duration of the current episode of ulcer disease at time of entry is shown in *Table* 4. The majority of pa-

TABLE Duration of Current in Patients in	Ulcer	-
Duration	N	0/0
Days	19	35.2
Months	20	37.0
Years	18	3 24.1
Not Specified	2	2 3.7
Total	5-	100.0

tients, 20 (37.0%) measured the duration in months while 19 (35.2%) and 13 (24.1%) measured it in days or years, respectively.

The ulcer disease episode was classified as a recurrence in 20 patients (37.0%) and it was newly diagnosed in 35 patients (64.8%) (Table 5).

Patients were diagnosed most often by radiography and less often by symptomatology or endoscopy (*Table 6*).

TAB Method of Initial Ulcer Episode in P	Diagnosis	
Method	N	0/0
Endoscopy	4	7.4
X-Ray	44	81.5
Symptoms	_6	11.1
Total	54	100.0

The smoking status of the patients is shown in *Table 7*. Approximately equal numbers of patients were smokers and nonsmokers.

The overall cumulative efficacy of sucralfate in this study is shown in $Table\ 8$. Approximately three-fourths of patients (74.1%) were healed after four weeks of therapy. After eight weeks of therapy the efficacy rose to 88.9%. The treatment failure rate (i.e., patients not healed after eight weeks of therapy) was 11.1%.

Subgroup analysis according to sex

TABLE 5
Type of Ulcer Diagnosed in Patients in Indiana
eer N %

	N	0/0
Yes	35	64.8
No	19	35.2
	54	100.0
Yes	20	37.0
No	34	63.0
	54	100.0
	No Yes	Yes 35 No 19 54 Yes 20 No 34

Note: Positive responses to these questions were not mutually exclusive.

TABLE 7 Smoking Status of Ulcer Patients in California

Smoker	N	% Smokers	% All patients
Total NO	28		51.8
YES less than ½ pack			
per day	1	3.9	
1/2-1 pack per day	20	76.9	
1-2 pack per day	3	11.5	
2-3 pack per day	0	0	
more than 3 pack			
per day	0	0	
Unspecified Amount	2	7.7	
Total YES	26	100.0	48.2
Total	54		100.0

and race showed no significant difference in healing rates from the overall population.

In this study, no association could be found between smoking status, alcohol consumption, or coffee intake and healing rates.

No patients in this study reported adverse experiences due to therapy with sucralfate.

Discussion

The diagnosis of duodenal peptic ulcer disease can be based either on clinical symptoms or on the more objective evidence found during a radiographic or endoscopic evaluation. The cardinal symptom of both gastric and duodenal peptic ulcer disease is epigastric pain. The quality of the pain is variable and can be described as gnawing or aching or, alternately, as

sharp or stabbing. Characteristically, however, the type of pain sensed by an individual patient remains relatively reproducible from one episode to the next during the course of the disease. Traditionally, it is taught that ulcer pain is relieved by food and antacids only to recur several hours later. Although some patients describe this pattern of activity, many patients have different patterns that prove to be due

TABLE 8 Cumulative Clinical Response in Ulcer Patients in Indiana

Response	N	0/0
Healed at 4 weeks	$\frac{-}{40}$	74.1
Healed at 8 weeks	48	88.9
Not Healed at 8		
weeks	6	11.1

to ulcer disease, and many who do have this pattern have no demonstrable ulcer on objective evaluation.⁴

The principal findings in peptic ulcer disease seen during radiographic examination are well recognized. A benign gastric ulcer should have smooth folds radiating around a demonstrable crater. Irregular lesions are suggestive of malignancy. Duodenal ulcers can often be seen during radiographic examination as well. The correlation between radiographic and endoscopic findings approaches 90% when these tests are interpreted by experts. While reassuring, this should prompt endoscopic evaluation in difficult or equivocal cases.

A thorough endoscopic evaluation by an experienced endoscopist remains the gold standard for the diagnosis of peptic ulcer disease. However, the indications for endoscopy as opposed to radiologic examination in cases of less than clear-cut symptomatology are still controversial and depend on the availability of the facilities and on economic considerations. Endoscopy need not be performed when x-ray studies reveal an unequivocal duodenal ulcer and there is no evidence of active bleeding.

This study confirms the impression that more patients are diagnosed as having peptic ulcer disease based on radiographic evidence (44 patients or 81.5%) as compared with either symptomatology (6 patients [11.1%]) or endoscopy (4 patients [7.4%]).

The cumulative efficacy of sucralfate in the therapy of peptic ulcer disease is shown in *Table 8*. The healing rate after four weeks of therapy was 74.1%, and it rose to 88.9% at eight weeks. This is comparable to healing rates reported in a double-blind, placebocontrolled, endoscopic evaluation of sucralfate in the treatment of peptic

ulcer disease carried out in an academic center. 7 Additionally, these healing rates are comparable to those reported for cimetidine and ranitidine in several large-scale, well-controlled studies. 8 This comparability has been borne out in other studies comparing sucralfate to H_2 -antagonists directly. 9,10

Interestingly, despite recent evidence linking cigarette smoking to an increased incidence of ulcer disease, as well as to impaired healing and relapse rates,11.12 this study did not demonstrate a consistent difference in healing rates between smokers and nonsmokers. Additionally, no association between healing rates and consumption of alcohol or coffee was demonstrated. This lack of association may reflect the "real life" nature of this study: In a community practice setting, it is difficult to control multiple potential variables in order to evaluate a single intervention. Modifications of cigarette smoking and consumption of alcohol or coffee may have occurred during the course of the study, making it impossible to demonstrate significant differences among subgroups.

The absence of adverse reactions indicates that the incidence of adverse experiences reported by physicians was exceedingly low.

Conclusion

This multicenter, prospective, real life evaluation of short-term (up to eight weeks) therapy with sucralfate for duodenal peptic ulcer disease revealed that, in the hands of community practitioners, this agent demonstrates ulcer healing rates comparable to those reported for randomized, academic trials of sucralfate, as well as those for $\rm H_2\text{-}antagonists$. The safety profile of sucralfate in this study showed it to be remarkably free of adverse experiences.

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Radionuclide Scintigraphy in the Diagnosis of Small Bowel Disease

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HE SMALL BOWEL is the most remote part of the alimentary tract from the mouth and anus; consequently, it is the most difficult to examine because of its anatomy and location.1 Although small bowel endoscopes exist, they have limited clinical application. Even with the advances made by ultrasound, computed tomography, and magnetic resonance imaging, clinical investigation of the small intestine still depends primarily upon barium contrast examination. Enteroclysis has improved the ability of a barium examination to demonstrate small bowel pathology and show nor-

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Abstract

Refinements in radionuclide scintigraphy in the evaluation of gastrointestinal blood loss of small bowel origin, inflammatory diseases, proteinlosing enteropathy, malabsorption and ischemia are presented. The increasing sensitivity and accuracy, and the ready availability and non-invasiveness of state of the art radionuclide examinations should be considered in the diagnostic evaluation of small bowel diseases.

Key Words

Small bowel, radionuclide examina-

Gastrointestinal bleeding, radionuclide diagnosis

Meckel's diverticulum, ectopic gastric mucosa

Inflammatory disease, Indium Malabsorption

Small bowel, ischemia

mality.1 However, like all other modalities, it has limitations.3

Radionuclide investigations pertaining to the small bowel have been shown to be fairly sensitive in a broad range of clinical entities.3,4 A brief update on the current role of various radionuclide examinations in the diagnostic evaluation of small bowel diseases is presented.

Gastrointestinal Blood Loss

The localization of the site of gastrointestinal (GI) bleeding is a difficult clinical problem even with endoscopy and angiography, especially if the bleeding rate is low and intermittent. Scintigraphic investigations for bleeding have no morbidity and have gained acceptance because of the reliability claimed for the techniques.5

Technetium sulfur colloid is the compound used widely. Following injection, a small proportion of the colloid will enter the small bowel at any site of active bleeding for as long as there is circulating colloid (Fig. 1). The blood concentration, however, falls quickly because the major fraction is cleared by the reticuloendithelial system with a half-time of about three minutes. Within 15 minutes of injection, most of the background activity has been cleared and the activity at the bleeding site is maximal. It is claimed that bleeding rates with well below 1 ml per minute can be detected with this technique.

In order to prolong the circulating level of radioactivity and improve the capability to detect intermittent bleeding, alternative radiopharmaceuticals have been used. Erythrocytes can be labeled in vivo with 99mTe-stannous pyrophosphate and serial abdominal images obtained.6 Some authors have suggested that 99mTc RBCs be the initial test in patients with GI bleeding.7 With this technique the patient can be monitored for as long as clinically tolerable (one or two hours if necessary). This opportunity for extended investigation yields a much higher sensitivity than does sulfur colloid despite the higher background activity. Suspicious focal accumulations may be enhanced with glucagon administration to decrease bowel persitalsis and dispersion of the radiolabeled blood.





FIGURE 1: Radionuclide image taken 20 minutes after the injection of 99^mTc-RBCs labeled by an in vitro technique on a 49-year-old patient with clinically undetermined site of GI bleeding. Bleeding was first visualized on the 10-minute film into a proximal small bowel segment (arrow). This film shows radioactive blood element passing more distally in the small bowel. Frequently, bleeding into the gut causes hyperperistalsis and rapid progression and dilution of the radioactivity in the gut contents. At surgery a non-specific ulcer was found in the jejunum and resected.

FIGURE 2: Scintigram taken 5 minutes after the administration of 2.5 mCi of 99 mTc pertechnetate shows abnormal accumulation in the mid-abdomen (arrow) on a 6-year-old boy who presented with blood stained stools (clinically described as currant jelly). Normal accumulation is seen in the stomach, and excreted pertechnetate is present in the bladder. A Meckel's diverticulum containing ectopic gastric mucosae was subsequently removed at surgery.

Detection of active bleeding has been reported in 83-100% of instances with these techniques compared with 65% using angiography alone even when the bleeding rate is greater than 1 ml per minute. Intermittent bleeding is most reliably demonstrated by red cell scintigraphy. The actual site or cause of bleeding, however, may not be accurately defined. Indium-111 labeled to red cells is the most recent agent to be tried successfully. The relatively long half-life of 111-In (2.8 days) offers the advantage of allowing the test to be extended to three days.

The clinical suspicion of bleeding ectopic gastric mucosa in a Meckel's diverticulum is a common indication for radionuclide investigation of the small bowel. The pertechnetate anion (TcO_x) is selectively accumulated and subsequently excreted into the bowel lumen by the mucoid surface cells of the gastric mucosa. Although a histologic diagnosis of ectopic gastric mucosa is based upon the finding of parietal cells, these may be absent and the pertechnetate study positive if mucoid surface cells are present. Parietal cells are said to not specifically

accumulate $99^{m}TcO_{4}$ and so are not essential for imaging purposes.¹³

Ectopic gastric mucosa accumulating pertechnetate can be detected by imaging because it contrasts against the relatively low background radioactivity of the abdomen ($Fig.\ 2$). Lesions with an increased blood pool, such as arteriovenous and malformations, hemangiomas, and other tumors may show up but if they do not accumulate pertechnetate they appear early (flow study, first 10 minutes, and then fade whereas gastric mucosa becomes more prominent with time).

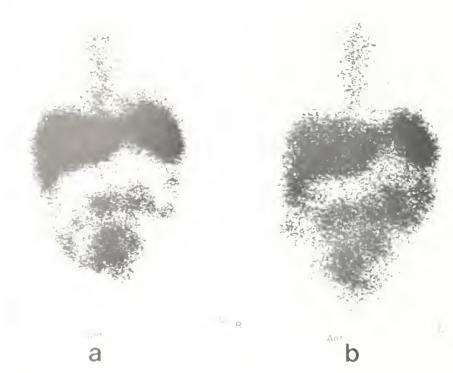


FIGURE 3: Radionuclide studies with 111-In labeled leukocytes and Ga-67 performed on a 67-year-old man with history of recurrent retroperitoneal liposarcoma admitted because of abdominal discomfort which at surgery revealed a partial and intermittent obstruction of the small bowel. Postoperatively, the patient developed multiple draining fistulae and was septic. The scintigram in Figure 3A was performed with the administration of 400uCi of 111-In labeled autologous leukocytes. An anterior scan of the abdomen at 24 hours revealed multiple areas of increased activity throughout the abdomen in a pattern suggesting inflammation of the bowel. Because of uncertainties with this diagnosis, a Gallium study was performed two days later using 6mCi of 67-Ga. In Figure 3B, the anterior view of the Gallium scan reveals essentially the same distribution of radioactivity as that seen with labeled leukocytes. Because of the more favorable gamma energies of 111-In for imaging, it is evident that the resolution of the image on the Indium scan is better than that obtained with Gallium. (Case courtesy of M.K. Loken, M.D., University of Minnesota)

Drugs and hormones have been shown to influence the localization of pertechnetate in the gastric mucosa. 14 Cimetidine, a potent histamine H2-receptor antagonist, inhibits the intraluminal release of pertechnetate; 15 glucagon, an intestinal antiperistaltic agent, enhances the image by suppressing washaway and dilution of the intraluminal activity which accumulates at the site of gastric mucosa.

Careful patient preparation and a standardized technique based on se-

quential gamma imaging has resulted in an overall increased sensitivity. False-negative results are related to suboptimal techniques, from use of perchlorate, from insufficient or destroyed gastric tissue, or from downstream wash of the pertechnetate by active bleeding or excessive secretions and/or other causes of increased motility.

In children, the diagnosis of a bleeding Meckel's diverticulum containing ectopic gastric mucosa by 99m-Tc pertechnetate imaging is reported to

have a diagnostic accuracy of 90%. In adults, however, the usefulness of radionuclide scanning is less certain. The overall accuracy of Meckel's scanning in adults quoted in one series was only 46%. In the latter age group, the combined use of pertechnetate scanning, enteroclysis and arteriography has achieved a pre-operative radiographic accuracy of more than 90%. The lower incidence of ectopic gastric mucosa in Meckel's diverticulum of adults makes enteroclysis a more accurate method of investigation in this age group. 13-18

Inflammatory Lesions

Indium-111-labeled leukocytes are now widely accepted and utilized for imaging inflammatory lesions in the abdomen. One commonly encountered inflammatory disease of both the small and large bowel is Crohn's disease. Indium-111-labeled white blood cells have been used in localizing areas in the colon affected by ulcerative colitis or Crohn's disease. Small bowel lesions from Crohn's disease can be similarly identified with labeled white cells. 20

Other inflammatory lesions of the small bowel can also be identified. Intra-abdominal abscesses, infectious disease such as *Yersinia* or infected jejunostomy or ileostomy sites can be identified with Indium-labeled white cells. This examination is of particular usefulness in patients who present with no localizing signs (*Fig. 3*). However, Indium-111 is expensive, requires two hours for preparation, and delivers a moderately high radiation dose.

Recently, 99^mTc-labeled leukocytes have been suggested as a suitable alternative to Indium-labeled leukocytes. This radioactive label has the advantages of being less expensive, rapidly prepared, and delivers a reduced radiation dose. Fotherby, et al. have suggested that Indium-111 tropolonate leukocyte scintigraphy is more sensitive than other radiologic procedures in detecting small bowel Crohn's

disease.²⁷ This has not been confirmed by prospective clinical studies.

Protein Losing Enteropathy

The diagnosis of protein losing enteropathy and assessment of response to treatment can be made with radionuclide techniques. The most reliable test makes use of the principle that chromium chloride is bound to transferrin so that transferrin metabolism and protein metabolism can be studied after intravenous injection of chromium 51 chloride²⁸ or Tc-99m albumin.²⁹ This test is rarely employed in clinical medicine but in selected cases may be helpful.

Intestinal Malabsorption

The radioactive breath test is an important non-imaging radionuclide study for detecting intestinal malabsorption. The fate of ingested and absorbed carbon atoms is oxidation to CO₂ which is exhaled. The use of 14C-labeled compounds has allowed development of techniques for studying nutritional deficiencies. In these techniques, the amount and rate of intestinal absorption can be estimated from the proportion of swallowed radioactivity that is exhaled.³⁰ This is most applicable in evaluating steatorrhea.

The Schilling test is a well known radionuclide test for intestinal malabsorption and is used to confirm malabsorption of vitamin B₁₂. In addition, this test can be used to study blind loop syndromes, post gastrectomy anemias, malabsorption syndromes, pancreatic disease and tapeworm infestation.³¹

Mesenteric Infarction

Radionuclide techniques also have been used in the assessment of gut infarction experimentally but have not been fully evaluated clinically. Tc99^m pyrophosphate has been used to assess bowel viability following infarction using perfusion imaging intraoperatively. 32-33 Accurate determination of the border areas of irreversibly compromised gut appears to be possible

with intraoperative imaging of 99^mTc macro-aggregated albumin or albumin microspheres injected into the superior mesenteric artery and imaged with a portable gamma camera.34 The practical clinical utility of this method has yet to be shown. The use of 99mTclabeled phosphate compounds in the differential diagnosis of necrotizing enterocolitis in the neonatal period has been documented.35-36 Accumulation of the radioactive agent in infarcted small or large intestine may be seen. This non-invasive technique may be particularly helpful in the critically ill neonate. Indium-111 leukocytes which are usually employed for inflammatory lesions in the abdomen or bowel have also been reported to localize in infarcted small bowel.37

Conclusion

Radionuclide techniques for detecting small bowel diseases are gaining in popularity since they appear to be readily available, non-invasive, and are becoming increasingly more reliable. The lack of morbidity and high sensitivity of radionuclide techniques should be taken into consideration when evaluating small bowel diseases.

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Pseudogout Following Parathyroidectomy

MICHAEL E. PAUSZEK, M.D. Franklin, Ind.

SEUDOGOUT IS A calcium-pyrophosphate deposition disease characterized by arthritis in conjunction with calcium-pyrophosphate crystals (CPPD) in the synovial fluid. The arthritis was first described in 1928 in conjunction with chondrocalcinosis.1 Recognized associations include hypothyroidism, hemochromatosis, neuropathic joints, aging, hypomagnesemia, hypophosphatasia, and hyperparathyroidism. The pathophysiology remains unclear. Like gouty arthritis, acute attacks can be precipitated by surgical procedures. Parathyroidectomy is particularly likely to precipitate an acute attack within a few days of the procedure.

Both acute and chronic forms of arthritis have been described. The acute attacks are generally monoarticular or pauciarticular and resemble other acute arthropathies. The chronic attacks last from four weeks to several months and can assume patterns similar to rheumatoid and osteoarthritis. These have been referred to as pseudo-rheumatoid arthritis and pseudo-osteoarthritis. Presented here is a patient with an unusual distribution of joint involvement for acute attack of CPPD disease.

Acknowledgment: Transcription of this case report courtesy of the Johnson County Health Foundation, Franklin, Ind.

Correspondence: Johnson County Internal Medicine Associates, Inc., 1101 W. Jefferson St., Suite E, Franklin, Ind. 46131. Case Report

In October 1986, a 56-year-old white woman was referred for evaluation of hypercalcemia. She was asymptomatic. There was no history of ingestion of antacids, Vitamin D supplementation, calcium supplementation, or other medication use. She was not a smoker. Screening laboratory data from September 25, 1986 revealed an elevated calcium of 11.6 mgs. per deciliter (normal 8.7 to 10.7), which was reconfirmed on October 3, 1986. Concomitant phosphorus level was 2.8 mg. per deciliter (normal 2.4 to 4.3).

On examination, her blood pressure was 130/80. Her neck exam was unremarkable and the thyroid gland was normal. Thoracic, abdominal, genitourinary and neurologic exams were all unremarkable.

A C-terminal/mid-region parathormone level was elevated at 3,285 picograms per milliliter (normal less than 15 to 340) with concomitant calcium of 11.7.

The patient underwent an uneventful neck exploration where a 1.5 by 2.5 cm. adenoma (right-inferior) was removed on December 30, 1986. Initial postoperative calcium was 7.9 mgs. and rose to 8.6 mgs. by the evening of January 1, 1987. Histologically, the lesion was a parathyroid adenoma, chief cell type.

On January 26, 1987, the patient returned for outpatient evaluation complaining of bilateral swelling of ankles and wrists beginning on January 22. On examination, the cervical incision appeared intact with some underlying induration. Synovial fullness and warmth was noted at both wrists with pitting edema over the dorsum of the hands. There was pain with range of motion of both wrists. Effusion, warmth, pitting edema and mild erythema were present at both ankles.

Microscopic examination of the left ankle synovial fluid revealed rhomboidal, weakly birefringent, intra and extracellular CPPD crystals. Westergren Sedimentation Rate was 17, T4 was 8.6 mcg% (normal 4-11), and a rheumatoid factor was negative.

The patient was treated with a nonsteroidal anti-inflammatory agent with resolution of her symptoms.

Discussion

The diagnosis of psuedogout depends upon identification of CPPD crystals in tissues or synovial fluid by definitive measures such as x-ray defraction or identification of crystals compatible with CPPD under polarized light with typical linear calcifications in fibrocartilage, articular cartilage, and joint capsules. Between 5 and 10 percent of patients with pseudogout have underlying hyperparathyroidism. No incidence for first attacks of pseudogout precipitated by parathyroidectomy is available, but in one series of 30 patients with hyperparathyroidism, the incidence of postoperative attacks was 10%.2 Unfortunately, despite correction of hyperparathyroidism with normalization of serum calcium following parathyroidectomy, pseudogout may persist as a clinical problem.

This patient's presentation three weeks following parathyroidectomy and her pattern of joint involvement were both atypical. Generally, acute attacks of pseudogout following parathyroidectomy occur chronologically related to the rapid fall in serum calcium in the postoperative period. Also, her pattern of symmetric joint involvement of both wrists and the ankles is more compatible with the "pseudorheumatoid" pattern seen in chronic CPPD disease. Though the diagnosis of pseudogout was entertain-

ed because of the patient's history of hyperparathyroidism and the recent parathyroidectomy, diagnosis was dependent upon her synovial fluid analysis.

Summary

The patient presented with a symmetric, acute polyarthropathy many days following parathyroidectomy for

hyperparathyroidism. Synovial fluid analysis confirmed the diagnosis of pseudogout. Noteworthy are both the timing of her attack and the unusual pattern of joint involvement for an attack of acute CPPD disease. The varied manifestations of calcium pyrophosphate deposition disease make it a consideration in the evaluation of many acute and chronic arthropathies.

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TOBACCOLESS SOCIETY

Editorial

The knowledge that tobacco is poisonous and that tobacco users easily become addicted to it has been around for many years. The fact that an addiction involving many millions of Americans is and will be difficult to cure has also been evident for a long time.

Cigarette smoking is now accepted as the largest cause of preventable death in the United States.

Dr. Byron Kilgore of Fort Wayne is a pioneer in the movement to banish the filthy and dangerous weed. Dr. Kilgore's medical literature search and his many questioning letters to cigarette manufacturers resulted in the basic indisputable evidence that tobacco was addictive, and especially so in the form of cigarettes. And the only people who benefited from the tobacco industry were the farmers, the manufacturers and the retail merchants—and, not to be forgotten, the collectors who gathered in the taxes

Dr. Kilgore's article, "Advertising the Pampered Poison: Tobacco," was published in this journal in June 1942.

The highly addictive quality of tobacco and the social attractiveness of cigarettes is well illustrated by dedicated work over many years that has been necessary for the progress we now enjoy in the "We Must Get Rid of Tobacco" campaign.

The efforts of Dr. Kilgore and others

who have toiled diligently and persistently over the intervening years have slowly educated the public and the medical profession regarding the dangers of tobacco and the discomforts, diseases and mortality which accrue to the victims of nicotine addiction.

The American Medical Association has instituted a crusade for a "Tobaccoless Society by 1990." Numerous state medical associations, including Indiana, have joined the AMA in this worthy endeavor.

Progress has been made. However, it is slow and it is now realized that, despite the unnecessary death rate among smokers, the number of smokers remains high due to the acceptance of the habit by teenagers. The stuff kills off many of the older users but attracts new smokers in sufficient numbers to almost cancel the gains obtained by the adults who stop smoking and the adults who die while still smoking.

The goal for a Tobacco Free Society has been identified and is now gaining in size and enthusiasm. ISMA has led in the formation of the Indiana Coalition for a Tobacco Free Society. Twenty health care associations and many individuals have joined together to hasten the time in the future when the single most preventable cause of death is eliminated in the U.S.

Public education and the public health admonishments of Indiana

physicians have led to the designation of smoking and non-smoking areas in government buildings.

ISMA has, through its Government Relations Department, sponsored for introduction four bills to the General Assembly during the session just concluded. Bills to (1) increase the sales tax on all tobacco products; (2) to increase the age of tobacco sales to minors from age 16 to 18; and (3) to require designated smoking and non-smoking areas in state and local government buildings were all passed and have been signed into law.

Only one ISMA-sponsored bill failed—one to prohibit free distribution of tobacco products in public places.

The public stand taken by practicing physicians all over Indiana has been a forceful element in this legislative success.

Public education in Indiana has been directed to the younger set. Like other bad habits, it is now apparent that the temptation to the use of tobacco is active in the lower grades.

ISMA has originated a "School Docs" project. The idea is to encourage physicians to participate in tobacco education in the third and fourth grades of public schools. Fifty-one physicians were active in this worthwhile program. The response from both schools and physicians has been very positive.—IM

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Before prescribing, please consult complete product information, a summary of which follows:

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INDICATIONS AND USABE. Rive epin is undicated for the treatment of the following infections when raised ty showerfallow may not include the control of the treatment of the following infections when raised ty showerfallowing in the COMER RESPRATION. TRACT INFECTION is assed by Steep pneumoniae. Streptococcus species (including kinetic procedure) and the strength of the strength

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WARNINGS BEFORE THERAPY WITH ROCEPHIN IS INSTITUTED CAREFUL INQUIRY SHOULD BE MADE TO DETERMINE WHETHER THE PATIENT HAS HAD PREVIOUS HYPERSENSITIVITY REACTIONS TO CEPHALOSPORINIS PENICLLINS OR OTHER DRUGS. THIS PRODUCT SHOULD BE GIVEN CAUTIOUSLY TO PENICLLINIS SENSITIVE PATIENTS. AN INDICITION SHOULD BE ADMINISTERED WITH AUTION TO ANY PATIENT WHICH HAS DEMONSTRATED SOME FORM OF ALLERGY PARTICUL ARLY TO DRUGS. SERIOUS ACUTE HYPERSENSITIVITY PREACTIONS MAY REQUIRE THE USE OF SUBCUTANEOUS PHINPERINE AND OTHER EMERGENCY MEASURES.

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ROCEPHIN (cellriaxone sodium/Roche)

Treatment with broad spectrum antibiotics afters the normal flora of the colon and may permit overgrowth if clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic associated colitis. Cholestyramine and colestipol resins have been shown to bind to the toxin in vitro.

associated collists. Criticistryramine and collessipoir estins have over shown to bring for the four in who Mild cases of collits respond to drug discontinuance alone. Moderate to severe cases should be man aged with fluid, electrolyte and profein supplementation as indicated.

aged with fluid, electrolyte and protein supplementation as indicated. When the rollitis is not relieved by drug disconfinance or when it is severe local vancomycin is the freatment of choice for antibionic associated pseudomembranous collitis produced by C difficule. Other lauses of collitis should also be considered. PRECAUTION'S GENERAL. Although transient elevations of BUN and serum creatinine have been observed at the recommended dosages the nephrotoxic potential of Roceptin is similar to that of other cephalosporns.

cephalosporins. Cethiasions is secreted via buth biliary and renatexcretion (see Clinical Pharmacrilogy). Therefore patients with renal faiture normally require no adjustment in dosage when usual doses of Roceptinn are administered but concentrations of drug in the serum should be monitored periodically if evidence of accumulation exists disage should be decreased accordingly.

accumulation exists dosage should be decreased accordingly. Dosage adjustments should not be necessary in patients with health dysfunction however in patients with both hepatic dysfunction and significant renal disease. Rocephin dosage should not exceed 2 gm daily without close munitoring of serum concentrations. Afterations in prothrombin times have occurred rarely in patients treated with Rocephin Patients with impared vitamin's synthesis or low vitamin's stores (e.g. chronic hepatic disease and mainfulntion) may require monitoring of prothrombin time during Rocephin tearlment. Vitamin is admissiation (10 mg weekly) may be necessary if the prothrombin time is protonged before or during therapy. Prulonged use of Rocephin may result in overgrowth of nonsusceptible engansms. Careful observation of the patient is essential. It superinfection occurs during therapy appropriate measures should be taken.

Rocephin should be prescribed with caution in individuals with a history of gastrointestinal disease

especially falls.

CARCINOGENESIS, MUTAGENESIS IMPAIRMENT OF FERTILITY. Carcinogenesis. Considering the maximum duration of treatment and the class of the compound, carcinogenicity studies with cettraxone in animals have not been performed. The maximum duration of animal foxicity studies was six months.

in animals take not been performed. The maximum duration of animal toxicity studies was six months Mutagenesis. Genetic toxicotogy tests included the Ames test a min innucleus test and a test for homosomal aberrations in human (Imphocytes cultured in who with cettra-wine. Cettra-wine showed no potential for mutagenic activity in these studies impairment of tertifity when given intravenously to rats at daily sixes up to 586 mig/ng/day appriminately 20 times the recommended clinical dose of 2 gm/day PREGNANDY Terratogenic Effects. Pregnancy Category B Reproductive studies have been performed in mice and rats at doses up to 20 times the usual tuman dose and have no evidence of embryoloxicity, retotoxicity to retradogenicity in primates, no embryoloxicity or retradogenicity was demonstrated at a dose approximately three times the human dose.

appromisely interesting the foundations of the following t

pregnancy only if clearly needed.
Nonteralogenic Effects In rais, in the Segment I Itertitity and general reproduction) and Segment III
genralia and postnatally studies with intravenously administered celtriavone, no adverse effects were
noted on various reproductive parameters during gestation and lactation including postnatal growth
functional behavior and reproductive baility of the offspring at doses of S86 mg/kg/day or less.
NURSING MOTHERS. Low concentrations of celtriavone are excreted in human milk. Caution should be
exercised when Rio eighn is administered to a nursing woman.
PEDIATRIC USE. Safety and effectiveness of Roreptin in neunales infants and children have been
established for the disagres described in the Dosage and Administration section.
AVERSE REACTIONS. Poan industriation is the state of injection (1%) Less the tollowing adverse reactions, which were considered to be related to Rio ephin therapy or of uncertain eliotogy were observed.
LOCAL REACTIONS. Poan industriation industriation in the receiver in the provided (less than 1%) was phebitis after IV administration.
HYPERSENS/ITMITY in ash (1.7%) Less frequently reported (less than 1%) were printfus. I Less frequently
LEMATOLOGIC econophila (6%). Introduction of the point delivery on and feel opportunits. I Lever or chilis.

**LEMATOLOGIC Costinophila 16% Introduction of the point of the

HEMATOLOGIC eosinophilia (6%) thrombocytosis (51%) and leukopenia (21%). Less frequently reported (less than 1%) were anemia neutropenia lymphicipenia thrombocytopenia and prolongation of The profit of the manufacture of the profit of the profit

and dysgeusia
HEPATIC elevi

elevations of SGOT (31%) or SGPT (33%). Less trequently reported (less than 1%) were

HEPATIC elevations of SGOT (31%) or SGPT (33%) Less frequently reported (less than 1%) were elevations of talkaline phosphatase and bifurbatic requirements (less than 14%) were elevations of creatinine and the presence of casts in the unine.

CENTRAL NERVOUS SYSTEM headache or disziness were reported occasionally (less than 14%)
GENTIOURINARY municlass or vaginitis were reported occasionally (less than 14%).

MISCELLANEOUS —disaphoresis and flustring were reported occasionally (less than 14%).

MSCELLANFOUS—diaphoresis and flushing were reported uccasionally (less than 1%) ofther rarely observed adverse reactions (less than 0.1%) include leukocytosis. Imphocytosis, mono cytosis basophilia a decrease in the prothrombin time, jaundice, glycosuria, hematuria, bronchospasm, serum sickness, abdominal pain. Lollis flatulence dyspepsia, palphations and epistaxis. DDSAGE AND ADMINISTRATION. Roceptin may be administered intraenously or intramuscularly. The usual adult daily-doses 1 to 2 grid given once a day rorin equally divided doses twice a day) depending on the type and severify of the infection. The fixed daily dose should not exceed 4 grams. For the treatment of serious miscellaneous infections in children, other than meninglis, the recommended total daily doses is 50 to 75 mg/kg (jind to exceed 2) grams) qiven in divided doses every 12 hours cenerally. Rocephin therapy should be continued for at least two days after the signs and symptoms of infection have disappeared. The usual duration is 4 to 14 days in complicated infections longer therapy may be required.

may be required.
If the irrealment of meninghts a daily dose of 100 mg/kg inot to exceed 4 grams), given in divided doses every 12 hours, should be administered with or without a hading dose of 75 mg/kg.

For the treatment of uncomplicated gonococcal intections, a single inframuscular dose of 250 mg is

For preoperative use (surgical prophylaxis), a single dose of 1 gm administered to 2 hours before surgery is recommended.

When freating intections caused by Streptococcus pyogenes, therapy should be continued for at least

ten days.

No dosage adjustment is necessary for patients with impairment of renal or hepatic function, however, blood levels should be monitored in patients with severe renal impairment (e.g., dialysis patients) and in patients with both renal and hepatic dy stunctions.

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Vals containing 1 gm equivalent of cettraxone Boxes of 10 (NDC 0004 1964 01)
Piggybark bottles containing 1 gm equivalent of cettraxone Boxes of 10 (NDC 0004 1964 03)
Vals containing 2 gm equivalent of cettraxone Boxes of 10 (NDC 0004 1965 01)

Visia Currialisming a gin-equivalent or certinatione Boxes of 10 (NDC 0004 1965 03). Browning the parameter containing 2 gm equivalent of certinatione Boxes of 10 (NDC 0004 1965 03). Bulk pharmacy containers, containing 10 gm equivalent of certinal-nine Boxes of 1 (NDC 0004 1971 01). NOT FOR DIRECT ADMINISTRATION.

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Eclecticism: Understanding Your Faculty

JAMES E. SIMMONS, M.D. Indianapolis

Dr. Simmons, Richter Professor of Child Psychiatry, Indiana University School of Medicine, presented the following remarks in June after accepting the 1987 Residents' Teacher of the Year Award.

TAM DEEPLY honored to receive the graduating residents' award and am privileged to make a few remarks.

Eclecticism in medicine is the practice of selecting what is best from all available scientific and theoretical knowledge. The eclectic physician can treat the whole patient. The eclectic psychiatrist needs to be knowledgeable about the biological, the psychological and the social factors underlying behavior. The "biopsychosocial model" is eclecticism for psychiatry. However, becoming and remaining eclectic in your practice is time consuming, mind boggling, anxiety provoking and often impossible. You have probably noticed that some of your faculty are biologically oriented, some are sociologically oriented and most of them are "psycho."

Medicine did not recognize mental illness until the end of the 18th century, just 200 years ago. Prior to that time treatment of deviant behavior was relegated either to the priesthood or to whatever criminal justice system existed at the time.

In the last century the mental hospital physician dominated

psychiatry. He firmly believed that all mental illness and deviant behavior were due to organic brain pathology, often tertiary syphilis. The priest and the chaman who adhered to the belief that psychical phenomenae were really the underlying causes were almost driven out of the mental health arena. This organic stance was curtailed in the late 1800s and the first half of the 20th century by the writings of Prince, Pavlov, Freud, Bleuler, Meyer and many others who supported the growth of psychological medicine.

From 1890 until shortly after World War II the enthusiasm for psychoanalytic and psychodynamically oriented psychiatry was tremendous, especially in America. Except among a small group of stubborn neuropsychiatrists, psychodynamic concepts zoomed to incredible heights of popularity. However, Freud's body was hardly cold in his grave when the new era of psychopharmacology was introduced and another psychiatric revolution occurred. At first, it seemed like just another one of our "fads." However, in the past 35 years this newest "revolution" has proved to have more substance than the abstract and theoretical arguments of past biological psychiatrists. These "new" ideas have created a trend away from hospitals toward outpatient treatment and community psychiatry with more potential for remaining useful than the offerings of either the somatic or the psychical enthusiasts of the past. Actually, for 25 to 30 years it has been fashionable in most psychoanalytic articles to cite at least one reference in which Freud prophetically mentioned the brain and future research in the same sentence. In the 1970s George Engel² and others wrote about how we have tried to disentangle the organic elements of disease from the psychosocial elements

of human malfunction and this just has not been possible. Of course, Thomas Szaas disallowed all data that do not fit the bio-medical model and wrote "The Myth of Mental Illness." There are a number who would also enjoy writing "The Myth of Child Psychiatry."

Illness has organic causes while problems of living or life adjustment are psychosocial in origin. With this stance neurology could flourish and psychiatry could disappear. We could dispose of or ignore at least 50% of DSM-III. Third-party payors would love this new arrangement.

Although the biomedical model has dominated medicine, it is no longer adequate for medicine, let alone for psychiatry. The biomedical model has acquired the status of dogma and only heretics would dare to question the ultimate truth of it. Some believe the physician should write prescriptions and the psychologists and social workers should do the psychotherapy. Too often, in reality this does not work well. In some cases the psychosocial factors are most prominent and must be dealt with while in other cases the organic or biological factors are of supreme importance and in too many cases all of these factors must be dealt with in varying degrees in the course of treatment. Considerable clinical judgment and perhaps even trial and error are necessary to make the biopsychosocial model useful and effective. Some time ago we were asked to consult on a 9-year-old girl admitted to Riley for chronic abdominal pain. The pediatric resident was perplexed. He said, "That little girl appears well adjusted, yet she seems to actually want an operation. I don't understand it." I asked, "How many abdominal operations has her mother had?" He responded, "Is that important?" I suggested he

Correspondence: Dept. of Psychiatry, Riley Hospital 341, 702 Barnhill Drive, Indianapolis, Ind. 46223.

go ask. He returned shortly and said, "Her mother has had only 11 operations but her grandmother has had 33."

Many psychiatrists are trying to return to the mainstream of medicine by declaring unquestioning loyalty to the biomedical model. It would be ironic if psychiatry should subscribe to a biomedical model which many medical leaders are now rejecting in favor of a total patient approach. The total patient approach has long been espoused by most of psychiatry. Perhaps in the first part of the 20th century we wandered too far from biomedical dogma. However, we should not now become so preoccupied with professional identity, status and economics that we forget that psychiatry is the only clinical discipline in medicine concerned primarily with the study of man and the human condition. Regrettably, NIMH has now focused almost exclusively on biomedical research.

Mainstream medicine is still worshipping the so-called "scientific methodologies" which are basically mechanistic and reductionistic in conception. Our patients need and deserve more than just a DSM-III label and an episodic blood chemistry.

Your faculty may not each be perfectly eclectic in their personal patient care but as a group they do offer you eclectic training.

Recently, your Residency Training Committee had a very serious retreat to study and revise the training program. At the risk of offending, the following fable on educational curriculi is offered:

The Animal School

(A fable of the administration of the school curriculum with special reference to individual differences, by Dr. G.M. Reavis, assistant superintendent, Cincinnati Public School, Education Forum, Jan. 1953.)

Once upon a time the animals decided they must do something heroic to meet the problems of a "new world", so they organized a school. They adopted an activity curriculum consisting of running, climbing, swimming and flying and, to make it easier to administer, all the animals took all the subjects.

The duck was excellent in swimming, better in fact than his instructor, and made passing grades in flying, but he was very poor in running. Since he was slow in running, he had to stay after school and also drop swimming to practice running. This was kept up until his web feet were badly worn and he was only average in swimming. But average was acceptable in school, so nobody worried about that except the duck.

The rabbit started at the top of the class in running, but had a nervous breakdown because of so much make-up work in swimming.

The squirrel was excellent in climbing until he developed frustration in the flying class, where his teacher made him start from the ground up instead of from the tree-top-down. He also developed charlie horses from over-exertion and then got C in climbing and D in running.

The eagle was a problem child and was disciplined severely. In the climbing class he beat all the others to the top of the trees, but insisted in using his own way to get there.

At the end of the year, an abnormal eel that could swim exceedingly well and also run, climb and fly a little had the highest average and was valedictorian.

The prairie dogs stayed out of school

and fought the tax levy because the administration would not add digging and burrowing to the curriculum. They apprenticed their child to a badger and later joined the groundhogs and gophers to start a successful private school.

Does this fable have a moral? Where is truth?

Don't let the "scientists" beat you down because you deal with complex nonreplicable events nor let the insurance companies refuse to pay you because their medical reviewers, completely devoted to biomedical dogma, cannot comprehend your charts. Much of our struggle over concepts has little to do with the patients' problems. These arguments reflect special interest advocacy and the preservation of social and economic power.

In 1983, when the National Residency Review Committee last evaluated our child psychiatry program for certification, their reviewer commented that he was impressed to see residents and fellows who were very involved in designing and implementing their own training. He further commented, "It was a real pleasure to meet residents who are happy."

I thank you for this honor tonight, for choosing our program for your training, for your input into the program and, I thank you for being happy, or at least appearing so, on the day the site visitors were here. I also wish you Godspeed in your careers.

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A Clinical and Radiological Review of Stress Fractures in Competitive and Non-Competitive Athletes

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JERRY L. KIGHT, M.D.²
JOHN R. McCARROLL, M.D.³
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EUGENE D. VAN HOVE, M.D.⁴
Indianapolis

A SAMERICANS continue to evolve into a more fitness-minded society, the role of sports medicine physicians and therapists in caring for the trained and untrained athlete will continue to grow. The treatment and prevention of sports injuries is not only important to organized teams so that they can maintain and

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Abstract

During the period January 1, 1984, through June 30, 1986, 332 nuclear bone scan studies of possible stress fracture cases were reviewed. Positive evidence of stress fractures was noted in 184 (55%) of these cases. Sufficient chart information for a comprehensive study was available in 115 of these positive cases. This study population included 48 men with an average age of 21.4 years and 67 women with an average age of 18.1 years. A total of 206 stress fractures were noted in these 115 patients.

Stress fractures were most frequently found in the tibias (47.1%), the feet

(27.7%), the femurs (14.5%) and the fibulas (7.5%). Within these areas, stress fractures were most commonly located at the posteromedial aspect of the mid-tibias, the medial side of the mid-femurs, the distal fibulas and equally among all of the metatarsals.

The 115 patients were also categorized based upon their athletic involvement and the most frequent stress fractures within each sport group were determined. The mid-tibial stress fracture was most common in track and cross country runners and in the "runner/jogger" group. Stress fractures of the metatarsals were most likely to be found in basketball players.

perform at their highest skill level, but it is also important to maintain the health of the "weekend athlete" in order to help reduce the costs of unemployment due to sports injuries. One specific sports injury which has received much attention during the last several years is the stress fracture (Fig. 1).

Stress fractures are a common athletic injury, especially in runners; in fact, stress fractures constitute about 10% of running injuries in the 1980s. 3.9.12.16 Stress fractures are due to repetitive, rhythmic muscular actions on a bone which is generally not accustomed to such action. 3.10.16.17 They occur for many reasons; 5 but, often stress fractures can occur from training habits that do not allow a gradual progression into a certain activity. 9 Many people, in an effort to get into shape quickly, will rush into an activ-

ity at a pace far beyond what their bodies can tolerate. Consequently, since the non-competitive "weekend athlete" usually does not exercise with much regularity and may tend to "overdo it," he is at a high risk for stress fractures, especially if his primary exercise is running. However, it should be noted that competitively trained athletes suffer stress fractures as well.

This presentation will study the frequency of occurrence and anatomical location of stress fractures in a population of 115 patients, which includes competitive and non-competitive athletes.

Materials and Methods

All bone imaging studies in this survey period were performed at Methodist Hospital of Indiana at Indianapolis. All patients studied were outpatients who were referred either by their private physician or by one of the orthopedic surgeons or podiatrists staffing the Sports Medicine Clinic located near the hospital.

Every bone imaging study for a 30-month period beginning in January 1984 was reviewed. A total of 332 patients were referred with pain to either diagnose or exclude the presence of a stress fracture. Many of these patients had prior radiographs that were negative, but a sizable number of patients had only a history and physical examination prior to referral for bone imaging.

The bone imaging technique routinely employed the intravenous injection of 20 mCi of Tc 99m methylene diphosphonate (Tc 99m medronate). Doses were adjusted downward based upon age, weight, and body surface area. Occasionally, a vascular flow study of the painful area was employed if clinical circumstances seemed to indicate that this might be helpful. In general, so-called three-phase bone imaging was not employed.

In most instances, an "early" (5-15 minutes post injection) gamma camera spot view was taken of the painful region. Whole body imaging in both anterior and posterior projections was performed on either a large field of view (LFOV) gamma camera or a gamma camera with moving detector and a whole body display mode at two hours post injection. Following completion of these images, gamma camera "spot" views of the abnormal or suspicious areas seen on the whole body scan were performed. Usually anterior and lateral views were obtained for purposes of further evaluation and interpretation. All images were made on transparent radiographic film exposed by an image formatter which was an integral part of each gamma camera system.

All of the cases initially read as positive were reviewed by two experienced nuclear medicine physicians who agreed on the presence of stress fractures and their anatomic locations without prior knowledge of the initial

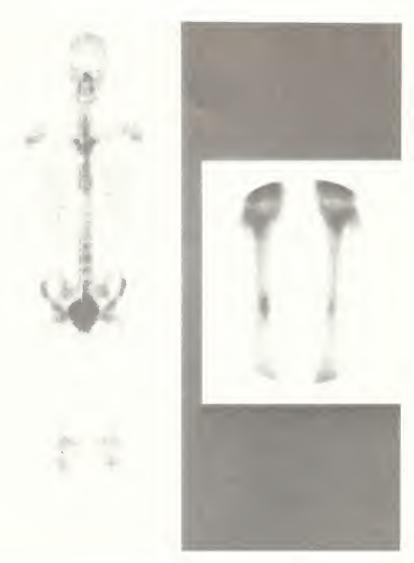


FIGURE 1: The image on the left is a typical anterior whole body bone "scan" performed with a gamma camera with movable detector and whole body display. The stress fractures in each mid-tibia are visualized due to increased metabolism related to bone repair. The remainder of the bony skeleton is normal.

The anterior camera "spot view" on the right demonstrates the two lesions with better contrast.

interpretation. These were recorded along with intensity of radionuclide accumulation. The following categories were used: 1+, focal accumulation that was faint but discernible above the radionuclide accumulation in adjacent bone; 2+, focal accumulation equal to or slightly greater than adjacent cortical bone; 3+, intense uptake clearly

discernible and much greater than normal bone accumulation elsewhere in the bone (equal to or greater than epiphyseal plate uptake in patients with unfused epiphyses).

Patterns consistent with shin splints^{7,8,11,14,15,19} were noted by the two observers in those cases where this finding was also present in association



FIGURE 2: This appearance of diffuse uptake along the proximal and mid-aspects of the tibia and fibula bilaterally is fairly typical of "shin splints." These patients do not have intrinsic bone injury and may continue their exercise program.

with one or more stress fractures. No attempt was made in this study to assess the incidence of "shin splint syndromes" in the group of patients who had no evidence of stress fractures as determined by bone scan or radiographic exam. However, review of the original reports did reveal a relatively large number of patients with shin splint syndrome, both with and without stress fractures, and this information was recorded.

Results

From January 1, 1984, through June 30, 1986, 332 possible stress fracture cases were referred to the Nuclear Medicine Department. These consecutive cases were retrospectively

TABLE 1
Summary of Stress Fracture Data Relating
the Number of Stress Fractures to
Differing Degrees of Radionuclide
Accumulation

Intensity of	Number of	Percent (%) of
Radionuclide	Stress Fractures	Total Number
Absorption	at this Intensity	of Stress Fractures
3+	139	67.5%
2+	53	25.7%
1 +	14	6.8%
Total	206	100.0%

TABLE 2 Summary of Stress Fracture Data for Study Population of 115 Patients

Anatomical Area of Stress Fracture	Total Number of Stress Fractures at Specific Anatomical Area	Percent (%) of Total Number of Stress Fractures
Tibias	97	47.1%
Feet	57	27.7%
Femurs	30	14.5%
Fibulas	16	7.8%
Other	6	2.9%
Total	206	100.0%

reviewed for presence of stress fractures and it was found that 184 (55%) of the original 332 cases were diagnosed as positive for one or more stress fractures following the bone scan evaluation. Of these positive cases, 115 (62.5%) had chart records available for review to obtain full clinical information, thus making them appropriate subjects for this study. A total of 206 stress fractures were identified in review of these 115 cases.

This 115-patient study population was composed of 67 women and 48 men. The average age of the group as a whole was approximately 19.5 years. The average age of the men was 21.4 years and that of the women was 18.1 years. In addition, it is interesting to note that the average age of the noncompetitive "runner/jogger" group was 30.0 years. If this group were remov-

ed from the study, then the average age of the remaining 94 patients would be 17.1 years.

In reviewing the bone scans of these cases, three grades of the intensity of radionuclide accumulation, as defined earlier, were used to categorize the stress fractures. Table 1 demonstrates the frequency with which these grades, 1+,2+,3+, were applied to the stress fractures cited. From these data, one can see that 93.2% of the cases were labeled as either 3+ or 2+. Both of these categories are indicative of radionuclide accumulation that would be obvious to a reasonably experienced observer. The remaining 6.8% of the cases, labeled as 1+, would require a much more experienced observer in order to evaluate and interpret these findings.

Table 2 indicates from these data

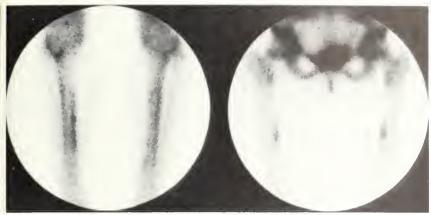


FIGURE 3: The patient presented with pain in the lower legs. The spot view on the left shows a pattern consistent with shin splints but there are no stress fractures in the tibias. There are bilateral stress fractures demonstrated in the medial aspect of both femurs.

that the most frequent anatomical areas afflicted with stress fractures are the tibias, feet and femurs. Although the tibias appear to be the most common stress fracture area, many times differential diagnoses must be made between tibial stress fractures or tibial shin splint syndrome (Fig. 2).16,18 In the original group of 332 cases, shin splint syndrome was diagnosed 31 times. Of the 148 cases that were negative for stress fractures, 12% (18) were diagnosed as shin splint syndrome. Of the 184 positive stress fracture cases, 7% (13) had associated shin splint syndrome; and shin splint syndrome was demonstrated in 6% (7) of the cases in our patient population of 115 in this series. Shin splint syndrome has been addressed by several authors. 7.8.11.14.15.19

In evaluating the most frequent sites of stress fracture within each anatomical area (Table 3), the shafts of the long bones were divided into proximal, middle and distal thirds. On occasion, the junctions between these thirds were considered to be the stress fracture sites, and were recorded as such. More specifically, regardless of which third of the bone is involved, stress fractures were usually located medially in the femurs and posteromedially in the tibias (Figs. 3-4). As far as the fibulas and metatarsals are con-

cerned, no particular pattern can be discerned from this study.

Finally, Table 4 divides the study population into five categories based upon the sport or athletic activity in which the patients were participating at the time of the injury. Based upon the data for track and cross country participants, it is not surprising that the non-competitive "jogger/runner" has a high percent of diagnosed tibial stress fractures. It was also noted that the percent of femoral stress fractures in the non-competitive "jogger/runner" is significantly higher than that percent of femoral stress fractures occurring in track and cross country runners.

TABLE 3 Summary of Most Frequent Sites Within Anatomical Areas

Anatomical Area and Number of Associated Stress Fractures	Most Frequent Stress Fracture Sites Within Anatomical Area	Number of Stress Fractures at Each Site	Percent (%) of
Femurs	1 Mid-Femurs	11	36.7%
	2 Distal Femurs	7	23.3%
30 Stress	3 Femoral Necks	5	16.7%
Fractures	4 Proximal Shaft of Femurs	3	10.0%
Tibias	1 Mid-Tibias	41	42.3%
	2 Distal Tibias	22	22.7%
97 Stress	3 Proximal Tibias	18	18.6%
Fractures	4 Inc Mid/Distal Tibias	10	10.3%
Fibulas	1 Distal Fibulas	11	68.8%
* 10 dites	2 Mid-Fibulas	3	18.8%
16 Stress			
Fractures	3 Proximal Fibulas	2	12.5%
Feet	1 Metatarsals	30	52.6%
	2 Navicular Bone	10	17.5%
57 Stress Fractures	3 Talus	6	10.5%
Other 6 Stress Fractures	Scattered Throughout Lower Spine	6	100.0%

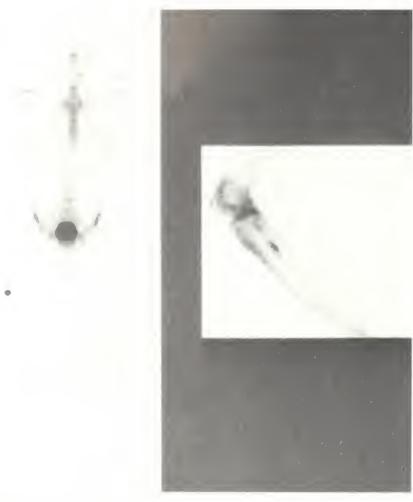


FIGURE 4: The whole body image on the left demonstrates the stress fracture in the proximal tibia medially. The lateral spot view clearly localized this lesion in the posterior aspect of the tibia.

Discussion

Bone scans were performed on these patients to confirm or rule out the presence of a stress fracture. If the patient has suffered a stress fracture, the nuclear bone scan will usually, upon a delayed or two-hour view, demonstrate a "hot spot" which is characteristically associated with the stress fracture. Early films, taken at 5-15 minutes, are not as useful diagnostically as the delayed view, but may on occasion aid in the diagnosis of stress fractures (*Fig.* 5).

Typically, plain radiographs supplemented by appropriate bone scans

using technetium 99m medronate are basic to the diagnosis of stress fractures.1.2.8 Bone scans, however, have a much higher degree of sensitivity and are able to detect stress fractures much earlier than the plain radiographs. In fact, bone scans will usually demonstrate the fracture site upon the onset of symptoms. In addition, nuclear bone scans will not only demonstrate a fracture at the site, but will often reveal other, nonsymptomatic, stress fractures. 13,16 Figure 6 shows a patient who presented with right tibial pain, and whose bone scan revealed bilateral

tibial, right femoral, and bilateral fibular stress fractures.

Radiographically, evidence of stress fractures will usually not appear until at least one or two weeks after the onset of symptoms;3-5,13,16 sometimes the x-rays may remain negative for several months. In fact, about 79% of those radiographs taken in this study failed to demonstrate any evidence of stress fracture. Since most of the radiographs were taken at the referring physicians' offices a few days prior to the bone scan, x-rays were not repeated at the time of the bone scan because it was felt that little or no change would occur during this brief period.

When the radiographs do demonstrate evidence of stress fracture, cortical bone thickening is usually noted. With an advanced acute stress fracture, fracture lines may be evident at the fracture site as well.5.13 Three different types of fracture lines are found to be associated with stress fractures. The first and most common is an oblique fracture line, usually confined to one cortical side of the long bone; the second is a longitudinal fracture line which may extend along a significant length of the bone; finally, the most dangerous and fortunately the most rare is the transverse fracture line demonstrated in Figure 7. This type of stress fracture line can develop into a complete break across the bone with all the morbidity of a common fracture at that site.5

As stated earlier, there is about a 3½-year difference in age between the men and women included in this study. In addition, it was noted that the 21 subjects included in the noncompetitive "runner/jogger" group were much older than the remaining 94 subjects included in the other groups. It is not obvious why the age difference between the men and women exists. However, it is likely that the reason for the age difference between the "runner/jogger" group and the rest of the study population is simply related to each group's participants. If one con-

siders the "jogger prototype," one might picture the business person who runs before or after work. Obviously, this image would suggest that joggers are an older group than the track or cross country runners competing in high school or college. So, if this image of the typical jogger is correct, then the significant age differences between the "runner/jogger" group and the rest of the study population may not seem that surprising at all.

Several articles suggest a different percentage distribution of stress fractures and indicate that the most frequent stress fracture site is the proximal tibia. 3,9,16 The femoral neck is also listed as a "critical" or "at risk" site for stress fractures to occur. 9,16 While both of these sites were found in this study to have been significantly involved with stress fractures, they were certainly not the most frequently fractured sites demonstrated in these 115 patients. Although the basis for these discrepancies is uncertain, possibilities may include a variation of the physical statures of the patients studied, diversities in the patients' athletic histories. or simply differences in the definitions of proximal, mid- and distal among the diagnosing physicians.

Earlier it was noted that in some cases, shin splint syndrome was found to be the cause of symptoms in patients whose bone scans failed to show any evidence of stress fractures (Fig. 2). In addition, shin splint syndrome was diagnosed in several patients who were found to have one or more stress fractures (Fig. 3). From an athletic point of view, there is a tremendous difference between the treatments of shin splint syndrome and stress fractures. Patients presenting with only shin splint syndrome are usually allowed to continue in their sport with appropriate therapy. On the other hand, patients presenting with stress fractures, with or without associated shin splints, are most often not allowed to continue in their activity and asked to rest until their symptoms disappear and there is evidence of bone healing.

TABLE 4 Summary of Data Relating Stress Fracture Sites with Specific Sports and/or Athletic Activities

Sport Basketball 23 Patients 42 Stress Fractures	Stress Fracture Area Femurs Tibias Fibulas Feet Other	Number of Stress Fractures in Each Anatomical Area 4 13 6 17 2	Percent (%) of Total Number of Sports Fractures for Each Given Activity 9.5% 30.9% 14.3% 40.5% 4.8%
Cross Country 17 Patients 25 Stress Fractures	Total Femurs Tibias Fibulas Feet	42 4 15 1 5	16.0% 60.0% 4.0% 20.0%
Track	Other Total Femurs	0 25 6	0.0% 100.0% 10.7%
24 Patients 56 Stress Fractures	Tibias Fibulas Feet Other Total	33 3 12 2 56	58.9% 5.4% 21.4% 3.6% 100.0%
Non- Competitive "Runner"/ Jogger" 21 Patients 35 Stress Fractures	Femurs Tibias Fibulas Feet Other Total	12 16 1 6 0	34.3% 45.7% 2.9% 17.1% 0.0% 100.0%
Miscellaneous 30 Patients 48 Stress Fractures	Femurs Tibias Fibulas Feet Other Total	4 20 5 17 2 48	8.3 % 41.7 % 10.4 % 35.4 % 4.2 % 100.0 %

In some cases alternative activities are substituted such as swimming, biking, and running in water. At other times, immobilization of the affected limb and/or ambulation with crutches are indicated as treatments for stress fractures.

The data presented here are, for the

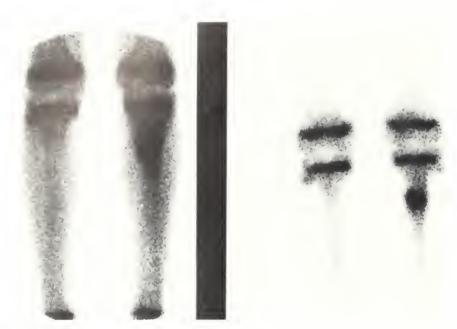


FIGURE 5: On the left is an anterior gamma camera image of the lower legs taken approximately five minutes after injection of the bone imaging agent. On the right is the routine two-hour delayed camera view of the same anatomic region. The "3+" uptake in the stress fracture in the proximal third of the tibia is seen well on both images. The delayed image, however, gives superior contrast since there is progressive bone uptake with time and progressive decrease in radionuclide concentrations in the blood and soft tissues. Occasionally, when there is associated soft tissue swelling, the early views can provide additional diagnostic information.

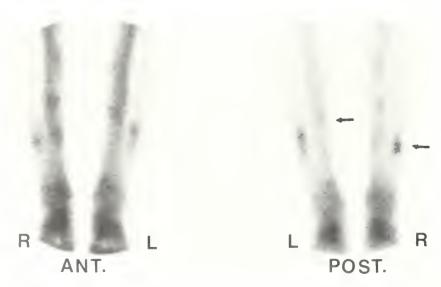


FIGURE 6: The anterior and posterior views of the lower legs obtained with a dual-headed gamma camera demonstrate a total of six identifiable fractures present. These fractures are probably of variable age and range from a "1+" uptake in the left mid-tibia to a "3+" uptake in the right fibula (arrows).

most part, in accordance with the information and data available in other literature. Our data suggest that the most frequent anatomical areas to be affected with stress fractures are the tibias, feet and femurs. Specifically, the sites most prone to be affected within these anatomical areas seem to be the mid-tibia posteromedially, the metatarsal bones of the feet, and the mid-femur medially. In addition, these data seem to indicate that participants in running sports or activities are most likely to present with a tibial stress fracture; whereas, participants in sports or activities with more jumping or pivoting movements are most likely to present with stress fractures of the feet.

If this population of 115 positive stress fracture patients is well representative of the generalized, athletically involved public, then perhaps these findings can be applied to populations outside this study.

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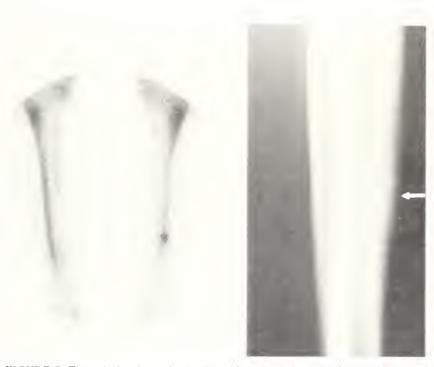


FIGURE 7: There is focal uptake in the mid-shaft of the left tibia at the site of a stress fracture. In this case, the radiograph was also abnormal, showing a transverse fracture line at the same position (arrow).

MARK YOUR CALENDAR

WHAT: The annual Indiana State Medical Association convention

WHEN: Thursday through Sunday, November 5-8, 1987

WHERE: The Radisson Plaza Hotel, Indianapolis

THEME: The Changing Face of Medicine

Herpes Simplex Viral Infection in the Leukemic Patient

LAURENCE H. BATES, M.D. DEBORAH S. PROVISOR, M.D. Indianapolis

ERPES SIMPLEX is an ubiquitous virus which is present in 90+% of the adult population as demonstrated by antibody testing. It is present in normal adults and children with occasional mucocutaneous lesions representing the initial infection or reactivation. In the immunocompromised patient this virus can cause much more severe cutaneous problems, and even visceral, pulmonary or encephalitic involvement with life-threatening symptoms or death.

We have become more successful in achieving remissions and cures in adults and children with acute leukemia. Left in the wake of this success is a population of immunocompromised patients who are potential hosts to opportunistic infection: viral, bacterial and fungal.

This issue of INDIANA MEDICINE presents such a case of fatal visceral involvement with Herpes Simplex virus without mucocutaneous lesions (adjacent page). When an immunocompromised patient presents with symptoms of infection of an unidentified source, the usual management is to obtain cultures and initiate antibiotic therapy. If fever persists in the

absence of positive cultures, antifungal agents are often added to the regimen. Until recently, no safe, effective antiviral agents were available to combat viral infections.

The initial manifestation of primary Herpes Simplex virus infection or reactivation is nearly always mucocutaneous lesion. This becomes threatening when the normal defense mechanism is inadequate to control multiplication and dissemination of the virus to critical organs such as the lungs, liver, adrenal glands or brain, often resulting in a fulminant illness and even death. The use of anti-viral agents such as ARA-A or, more recently, ACYCLOVIR has not been thoroughly evaluated in such cases due to case rarity or lack of recognition, yet this certainly seems to be indicated in such threatening clinical situations.

The presence of Herpes Simplex antibodies before immunosuppression in a patient seems to be predictive of the likelihood of reactivation of the virus. A high titre is predictive of mucocutaneous Herpes Simplex reactivation after immunosuppression, at least in the model of the renal transplant patient. Antibody testing of leukemic patients at the time of diagnosis might be helpful in alerting the physician to the increased risk of subsequent infection.

Cutaneous infections in the immunocompromised patient may require minimal treatment if mild and not progressive.² Local application of ACYCLOVIR may control the local lesion and viral shedding. More extensive or spreading lesions should be treated with oral or intravenous ACYCLOVIR for a minimum of five days or until the lesions clear. Genital Herpes is treated much as oral-labial infection. Visceral involvement requires more intensive therapy intravenously, and if encephalitic involvement is present, a minimum of 10 days therapy should be given.

Prophylactic ACYCLOVIR has been shown to be effective in seropositive patients who have had bone marrow transplant or intensive chemotherapy. This appears to be a suppression rather than elimination of the virus, as most patients develop recurrent infection when the ACYCLOVIR is discontinued.^{3,4}

Although the short-term use of ACYCLOVIR seems to be associated with few, if any, side effects in most patients, its long-term use has not been sufficiently studied. Studies thus far reported indicate that the best results are obtained with early initiation of therapy. Long-term use of oral ACYCLOVIR has been reported to be useful in patients who have a history of frequent recurrences of the viral infection with Herpes Simplex, but the risk of development of a resistant strain of the virus must be considered.

An immunocompromised patient presenting with findings of acute infection and mucocutaneous lesions certainly should alert the clinician to the possibility of visceral Herpes Simplex and the therapy regimen would likely include an anti-viral agent. As pointed out by the author in the abovementioned case, Herpes Simplex virus infection may occur without mucocutaneous lesions. If the patient in such a situation fails to respond to antibiotic or antifungal agents, certainly anti-viral agents should be tried while awaiting cultures. If the outcome is a fatal one, postmortem cultures for virus should be done to better understand and treat this difficult problem.

From Indiana Oncology-Hematology Consultants, 1828 N. Illinois St., Indianapolis, Ind. 46202. (References available on request.)

Fatal Systemic Herpes Simplex Without Mucocutaneous Manifestations in a Child With Acute Lymphocytic Leukemia

MOHAMMAD I. HUSSAIN, M.D.¹ HASSAN YAISH, M.D.² CHARLES MAIN, M.D.² Abstract

Systemic herpes simplex virus infection is generally known to be associated with mucocutaneous lesions. This report presents the case of a 5 year old child, who was being treated for acute lymphocytic leukemia with central nervous system relapse. The child developed fatal disseminated

herpes simplex virus infection, without any mucocutaneous manifestations. The clinical presentation, autopsy findings, laboratory methods for detection and the possibility of treatment with antiviral agents is discussed. This report should enhance the recognition of disseminated HSV infection without mucocutaneous lesions.

YSTEMIC HERPES SIMPLEX virus (HSV) infection has been described in neonates, in children suffering from protein calorie malnutrition (Kwashiorkor), in pregnant women, in adults with hematologic malignancies, in persons undergoing immunosuppressive therapy after renal transplantation, in patients with cellular immune defects and in a child who had acute lymphocytic leukemia with central nervous system (CNS) relapse. In all of these reports, the systemic infection had been associated with concurrent mucosal, cutaneous or mucocutaneous herpetic lesions.

We wish to report our experience with a child who developed disseminated HSV infection without any preceding or concurrent mucocutaneous lesions, during the course of treatment for acute lymphocytic leukemia.

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Case Report

A 5½-year-old white male child received chemotherapy for the treatment of acute lymphocytic leukemia (of Null cell type) for more than two years and was in complete hematologic remission. Chemotherapy consisted of prednisone, vincristine, 6-mercaptopurine, methotrexate, cyclophosphamide and adriamycin, given sequentially, in various combinations. In addition, central nervous system (CNS) prophlaxis was given as two administrations of intrathecal methotrexate (IT MTX) every 12 weeks.

At 5 years of age he developed CNS leukemia. This was treated with the administration of five doses of intrathecal methotrexate, given twice a week, followed by 2400 rads irradiation to the cranial vault. Irradiation was delivered in fractions, over three weeks. This therapy achieved remission from CNS leukemia; however, further treatment was continued and the patient received four doses of IT MTX and hydrocortisone after the completion of irradiation. The last such treatment was given two days prior to the final admission to the hospital.

Although the systemic chemo-

therapy had to be interrupted briefly on a few occasions during the course of treatment for CNS disease, the child remained in complete hematologic remission.

He was admitted to the hospital with the history of fever, vomiting and diarrhea. At the time of admission, the child was noted to have moderate alopecia. He was alert, completely oriented and responsive. Dehydration was clinically assessed to be mild to moderate. No other abnormal physical findings were present. No enlargement of the abdominal organs was noticed and the patient had no skin or mucous membrane lesions. At this phase of systemic chemotherapy the patient was taking 6-mercaptopurine (2.5 mg/kg/day) and had been on oral prednisone (3 mg/kg/day) for about two weeks prior to admission.

Initial laboratory studies revealed a white cell count of 1 thousand/cmm with 36% neutrophils, 10% band forms, 44% lymphocytes, 4% monocytes, 10% eosinophils and 1 nucleated red blood cell per 100 white cells. Hemoglobin was 12.2 Gm/dl and the platelet count was 90 thousand/cmm. Two days prior to the admission the

total white count had been 3.8 thousand/cmm with 74% neutrophils, 19% band forms, 1% lymphocytes, 3% monocytes and 3% eosinophils, along with a Hb level of 11.7 Gm/dl and a platelet count of 169 thousand/cmm. A lumbar puncture two days prior to admission had yielded a clear CSF with one white cell, no red cells and normal glucose and protein determinations. CSF cultures were negative for bacteria and fungi.

Serum electrolytes at admission showed Na 131.0 mEq/L, K 4.0 mEq/L, BUN 55.0 mg/dl, creatinine 2.1 mg/dl and uric acid 10.0 mg/dl. Total bilirubin was 4.3 mg/dl and the direct reacting fraction was 2.7 mg/dl. Alkaline phosphatase was 122 U/L. Hepatitis B surface antigen was negative.

The patient was treated with intravenous fluids and, because of fever and severe neutropenia, he was treated for a presumptive diagnosis of bacterial sepsis with a combination of cephalothin sodium and gentamycin.

By the second day after admission, the general condition remained unchanged and patient had no vomiting; however, the diarrhea continued. Repeat laboratory studies revealed a platelet count of 13 thousand/cmm, Na 120 mEq/L, K 4.1 mEq/L, BUN 83 mg/dl, creatinine 2.7 mg/dl and uric acid 12.3 mg/dl. Total bilirubin 5.2 mg/dl, direct fraction 3.6 mg/dl, SGOT 8250 U/L, LDH 3940 U/L and CPK was 2395 U/L. The urine was cloudy, dark yellow and positive for heme; however, red cells, white cells or casts were not reported.

The alterations in the composition and volume of the intravenous fluids administered to the patient showed no improvement in the serum electrolytes or the kidney function. At 23 hours after admission, the patient developed a generalized seizure, which was controlled by intravenous administration of diazepam and dilantin. His condition deteriorated progressively after that and the course was complicated by further convulsions, coma, occasional episodes of bradycardia, hypocalcemia

and progressive hyponatremia. He died 36 hours after admission.

Autopsy Findings

At autopsy the liver was soft, pale yellow and slightly enlarged. Cut surface showed centrilobular congestion, and multiple sections revealed extensive patchy coagulation necrosis. The necrotic areas were generally circular and discrete, occasionally confluent, followed no uniform pattern and were distributed randomly throughout all the lobules. The inflammatory response was minimal and only scattered neutrophils and eosinophils were recognized. Special stains for bacteria, fungi, acid fast organism, hepatitis B surface antigen, copper and iron were all negative. This random pattern of generalized necrosis was consistent with HSV hepatitis and, although Cowdry Type A inclusion bodies were not identified, immunoperoxidase studies employing antibody to HSV Type 2 revealed orange granular deposits in the nuclei and cytoplasm of many of the hepatic cells.

The brain, lungs, adrenals and kidneys showed occasional petechial hemorrhages. Microscopic examination of these organs was unremarkable.

Multiple sections of ribs and vertebral bodies revealed soft and grossly unremarkable bone marrow, but the microscopic exan showed a moderately hypocellular bone marrow with decreased megakaryocytes and decreased numbers of erythroid and myeloid precursors. There were numerous histiocytes scattered throughout the sections, some exhibiting abundant foamy cytoplasm and others displaying erythrophagocytosis. Marked diminution of splenic lymphoid nodules was evident. The red pulp contained an increased number of histiocytes, some of which showed erythrophagocytosis.

Discussion

Approximately 40-60% of children are seropositive for HSV infection by 5 years of age. ¹⁰ The mucocutaneous le-

sions are usually the first clinical evidence of the presence of HSV infection in immunosupressed patients. The present case indicates that it is possible to see systemic HSV infection without any clinical or autopsy evidence of mucosal or cutaneous lesions of herpetic nature. The primary HSV can be severe in immunosuppressed individuals; however, the absence of mucocutaneous lesions in our case does not rule out reactivation of a previously acquired latent HSV infection

Disseminated HSV infection is characterized by fulminant hepatic and adrenal necrosis11,12,13 and is generally seen in association with DIC.1 Our case demonstrates all the clinical and histologic criteria that are consistent with the findings seen in HSV infection. Immunoperoxidase studies employing antibody against herpes simplex virus Type 2 disclosed granular orange deposition within the nuclei and cytoplasm of numerous hepatic cells and is considered diagnostic.14.15 The presence of plentiful benign histiocytes in the spleen and the bone marrow, many of which displayed prominent erythrohagocytosis, are also consistent with the histologic characterics of active viral infections, including HSV. Similar findings have been reported by Risdall and associates in immunosuppressed patients with virus associated hemophagocytic syndrome.16

The presence of mucocutaneous lesions, which generally precede the disseminated infection, are available for an early diagnosis, by several laboratory methods, such as fluorescent antibody studies,21 or by electron microscopy.22 Virus isolation in tissue cultures can be very easily carried out.10 Recovery and identification of the virus usually takes 2-7 days. In the absence of mucocutaneous lesions, the clinical recognition may not be possible, yet the diagnosis should be considered under appropriate circumstances and a rapid confirmation may be achieved by immunofluorescent and immunoperoxidase techniques.

The serious consequences of various types of disseminated viral infections in patients with immune deficient status and in children with malignancies are well known. The effectiveness of zoster immune globulin (ZIG)17 and development of varicella vaccine18,23,24,25 has made it possible to control or modify varicella-zoster infection in immunosuppressed children. A recent report has focused attention on disseminated adenovirus infection26 in a child who was receiving chemotherapy for malignant histiocytosis. Disseminated HSV infection in children remains to be a lesser known and recognized problem. This report should serve to increase the awareness of the attending physician in the recognition of disseminated HSV infection, especially in the absence of any mucocutaneous lesions.

Adenine arabinoside (Ara-a) has been used effectively in the treatment of HSV infection of the central nervous system. ¹⁹ A trial of this compound in cases of disseminated HSV infection will surely be warranted on the basis of these studies. Acyclovir is another effective modality for the treatment of HSV infections.

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Reviewing Insurer Performance: The Unmet Need

Reimbursement Problems and Tips for Coping

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N RESPONSE TO the growing list of insurer-related problems, 1-10 the president of the Grant County Medical Society established an ad hoc committee to review the following questions: "Has the time come for the Grant County Medical Society to establish a carrier performance review committee? If yes, what type?"

The ad hoc committee's recommendations were adopted and included a \$25 annual dues increase to help cover expenses of the new Insurer Performance Review Committee (IPRC) as well as three resolutions to be presented next month at the annual meeting of the Indiana State Medical Association. The resolutions urge greater state and national medical society participation in insurer review activities. This paper

Abstract

The Grant County Medical Society has established a standing Insurer Performance Review Committee (IPRC), which will review the performance of private insurers and third-party carriers in our locale. It will gather data from physicians' offices about carrier performance problems such as delays of preadmission certification, and denials and miscalculations of reimbursement. IPRC will also compare the coverage provided by one insurer to that of others. IPRC will help correct

the imbalance that has developed between the need to practice scientific medicine prospectively and the currently fashionable trend of some insurers to practice medicine retrospectively, and to diverge from their primary mission of providing insurance coverage expeditiously. IPRC includes physicians, members of physician billing services and members of the medical society auxiliary. IPRC will share information and cooperate with other medical societies with similar reviewing mechanisms.

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is based in part on the report presented to the Grant County Medical Society at the June 23, 1987 meeting.

Background

Medical research brought new hope to many patients but also increased the costs of care ($Fig.\ 1$). In order to provide the most up-to-date medical care, physicians concentrated on coping with the medical information explosion. Medical schools carefully selected gifted applicants, increased time in school and facilitated subspecialty proliferation. Physicians accepted the CME burden as a way of life while insurers focused on mechanism for sharing the costs for high quality care.

In the meantime, government bureaucracies proliferated (Fig. 2). They and their proxies, the carriers and some private insurers incorrectly alleged to patients and the public that doctors charge above "customary" and

"prevailing" rates^{1,2} and order medically unnecessary tests and services. Then the carriers installed more clerks and computers to review medical care retroactively. The trend to require "second opinion" and "preadmission certification" markedly increases paperwork for physicians.

Insurers try to avoid responsibility for potential malpractice caused by their delays but like the reduced expenditures. They also try to escape being charged with practicing medicine without a license even when their lists of reimbursement (and hence service) deletions are compiled not by physicians but by office personnel. This trend threatens to compromise quality care by impairing the trust between physicians and patients, by reducing services and by delaying medical care. This report lists some of the major problems and recommends solutions. Although most of the recommenda-

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tions are addressed to the newly established committee in our county, they will be applicable to corresponding entities in other locales and organizations.

Recent and Emerging Problems

• Problem #1: There is insufficient monitoring of reimbursement accuracy and timeliness of insurer services.

The private insurance companies, Medicare carriers, and the Health Care Financing Administration have created many problems for our area physicians and patients. The reimbursement inaccuracies, delays, and outright denials have been described in a lengthy series of newspaper articles.1-10 However, the focus of remedial measures has been on patient problems since our community has a very active medical staffsponsored Patient Advocate Committee. Physician problems have received less attention. The IPRC can help fill this void. The delays and reimbursement problems also drain time from physicians as well as their office staffs. When a doctor or billing office has to refile or resubmit a claim more than seven times, or has to refile up to 30% of correctly billed assigned claims, time and resources, which should be devoted to the medical needs of patients, are wasted.

RECOMMENDED SOLUTION: At present, these types of problems tend to be documented in anecdotal form. The IPR Committee should establish statistically valid comparisons between the performance of different insurers in our locale.

Eventually, such information could be useful when patients ask individual physicians for advice regarding selection of insurance companies. Methodology could be adapted from a recent study conducted by the American Society of Internal Medicine. While that study focused on Medicare carriers nationwide, IPR should focus on comparing services of the insurers active in our community.

• Problem #2: The myth that insurers are not liable for malpractice due



FIGURE 1
Coping with the medical information explosion

to second opinion delay and precertification denial mistakes.

The insurers like to insist that preadmission certification delays or denials do not constitute medical practice. The insurers also stress that such requirements do not prevent a physician from admitting a patient, if he or she feels it is warranted. However, it is obvious that a patient is less likely to choose to undergo a procedure if the patient knows that it will not be reimbursed. The delays due to insistence on a second opinion can also harm a patient's health. For instance, an insurer in the Minneapolis area required a second opinion and this delayed the treatment of an 8-year-old boy. The delay cost the sight in his right eye. The carrier settled the malpractice suit for \$1.2 million on the day the trial was to begin.12

RECOMMENDED SOLUTION: The myth that precertification and second opinion requirements do not constitute practice of medicine should be dispelled. IPRC should collect and disseminate to physicians information pertain-

ing to this topic. Such information should include documentation of precertification delays with follow-up as to adverse effects on patient care. Despite their self-serving disclaimers, the insurers should not be allowed to avoid responsibility for delay-associated problems. Detailed performance standards for insurers should also be developed and applied.

Several committee members could try out different methods for reliably documenting that precertification was requested, at what time, and whether the insurer's personnel documented it. An insurer's clerk may suddenly deny that the insurer had ever been contacted regarding precertification.

• Problem #3: The myth that deletion of reimbursement for lab tests and "unnecessary" procedures does not constitute medical practice induces guilt in doctors and immobilizes legislators.

Numerous articles about high medical costs have appeared in lay as well as medical literature. 13,14 Many physicians share that concern and try to consider alternative approaches.

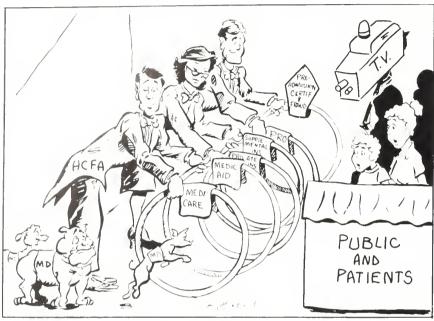


FIGURE 2
The proliferation of government bureaucracies

However, some doctors begin to feel so guilty about the possible overuse of some tests by their colleagues that they become defensive and refuse to criticize individual company excesses; they hesitate to ask legislators for curbs on such insurer excesses.

Medical care is so complex that some differences of opinion will always exist about the necessity of a test or procedure. Medical scientists, including anatomic pathologists, who perform autopsies, know the relative inexactness of medical science. Therefore, good medical practice requires extensive testing in order to come as close as possible to an accurate diagnosis. Each patient has to be treated prospectively. Contrary to these well established principles, the current fashion in the insurance industry is exemplified by its requirement to perform the "retrospective medical audit to verify that the admission and the stay were medically appropriate."15 The same insurer then goes on to say, "Our precertification does not guarantee that the services performed will be covered since actual services rendered are unknown at the time of the request."

This borders on a threat not to pay for diagnostic work done on a working diagnosis which may change later as the test results come in—and the symptoms become clearer as the disease progresses. This approach reduces the insurance coverage for a patient without admitting it to the patient.

One insurer, Blue Cross/Blue Shield of Indiana, sent to the physicians in our county a list of "Non-payable Laboratory and X-ray Codes for General Motors Informed Plan Choice Enrollees." Many of the deleted codes covered vital tests, such as estrogenreceptor assay for cancer patients, thin needle aspiration biopsies, and hepatitis and AIDS testing.

The insurer reassured the physicians that they could still order the tests and bill the patients directly. However, the insurer did not tell the physicians that a memo had been addressed to all presidents, chairmen and benefit plan representatives of all General Motors local unions explaining the reasons for stopping reimbursement for the numerous CPT-4 coded claims by the local plans. The memo

stated that the procedures were "either not a covered benefit or were obsolete in the practice of medicine in today's high tech society."

This is a free country. A private insurer can delete coverage if it so wishes. However, it should then state clearly that the reason for deleting it is commercial rather than to try to shift the onus onto doctors by claiming the tests are "obsolete." One can imagine patient reactions when they are told by their union representative that a doctor may have ordered an "obsolete" test. The trust in that doctor would be impaired. Maybe the patient-doctor relationship would even be severed. The use of such disclaimers clearly intrudes into patient-physician relationships and can be regarded as interferring with the proper practice of medicine. Furthermore, in this instance, the practice of medicine appears to have occurred without a medical license, since the deleted code list was compiled "not by physicians, but by benefit administration specialists."8

RECOMMENDED SOLUTION: The IPR Committee should initiate work on a listing comparing the covered benefits of some of the major insurers in our area. The membership of our society would then be in a better position to provide constructive advice when patients ask doctors or their billing agents which insurers provide better coverage. IPRC could also ask that insurers be more precise when labeling benefit changes. For example, the above-mentioned list of deleted tests could have been divided into two sections, or even two separate lists labeled "Not a covered benefit" and "Obsolete procedures." The items in the "obsolete" list should be clearly referenced. Perhaps the insurers should consider scientific references in a format established in the scientific community.

• Problem # 4: Biased treatment of patients and doctors under current laws, contracts and agreements.

Medicaid and other insurer-initiated

rules, regulations and contracts often reflect a bias against physicians and patients. Regarding payment level reviews, patients are at a disadvantage, since the carrier either reviews its own performance or does not have an obligation to give the patient all of the relevant data regarding usual and customary rates. Penalties for doctors are usually heavier than for insurers or carriers. Sometimes penalties are proposed only for the physicians and not the carrier (Figure 3).

There is concern that implementation of this plan (Figure 3) could be quite damaging to many physicianpatient relationships unless there is very careful monitoring of the clerical personnel of carriers. Past experience Medicare reimbursement with snafus³⁻⁷ suggests that it would be prudent to develop a local mechanism to monitor fair implementation of the Medicare regulations. The previously described series of newspaper articles have documented many carrierinduced mistakes in regard to implementation of Medicare rules.

Since the Medicare carrier and HCFA have not announced massive internal quality control measure improvements, the same types of snafus that plague patient reimbursement can be expected to occur when the new regulations are implemented. However, since the notices alleging the doctor provided a "medically unnecessary" service will go to the patient and will make the physician look less than competent, their impact will be much greater.

If an untrained or insufficiently trained clerk makes a mistake, a subsequent review of the case and exoneration of the doctor may not undo the damage to a particular physician-patient relationship.

RECOMMENDED SOLUTION: The IPRC ideally should review all health plans marketed in our community including HMO, PPO, Key Health, etc. and carefully follow the implementation in our community. IPRC should try to anticipate potential problems and

5. Prohibition of Unassigned Billing by Nonparticipating Physician When Services are Determined to be Medically Unnecessary

Effective October 1, 1987, when a nonparticipating physician provides services on an unassigned basis which are determined by a carrier or peer review organization to be medically unnecessary:

- The physician is required to refund any amounts collected from the beneficiary within 30 days after receiving notice that the services were determined to be medically unnecessary, or within 15 days after receiving notice of an adverse determination upon reconsideration or appeal.
- A refund would not be required if:
 - The physician did not know and could not reasonably have been expected to know that the services would be found to be medically unnecessary, or
 - (2) The beneficiary was informed in advance that Medicare payments would not be made for a specific service and agreed to pay for the service.
- Carriers and peer review organizations will send denial notices based on medical necessity determinations to the physician and the beneficiary.
- o Physicians who fail to make required refunds on a timely basis hay be subject to sanctions, such as exclusion from the Medicare program and/or civil money penalties.

FIGURE 3: This text is from a recent Medicare rules announcement.¹⁶ The authors have circled the specific terms they wish to emphasize.

recommend possible remedial measures, maybe with the help of state or national medical organizations. For example, AMA has a Department of Health Care Review, which at present is focusing on the Peer Review Monitoring Project. IT In addition, IPRC should review as many carrier and insurer rules and agreements as possible. It should also develop equal treatment clauses.

For example, the regulation in Figure 3 should be amended with such a clause. The amendment could stipulate that if the Medicare carrier does not do its work accurately and in a timely fashion, it also may be subject to sanctions, such as exclusion from the Medicare program and/or civil money penalties. If a doctor may be penalized \$2,000 per single CPT-4 code violation, why shouldn't the same penalty apply to the carrier? Indiana patients might gain substantially if such a requirement were in force. For example, if the carrier again accumulated a backlog of 450,000 claims⁶ and had to pay a \$2,000 penalty for each claim, the aggregate penalty payment for the carrier to patients in Indiana would be \$900 million. If the carrier faced a potential penalty of such magnitude, is there any doubt

that service to our patients would improve?

• Problem #5: Wishful thinking and misconceptions about MAACs.

Some physicians have a variety of misconceptions about the new regulations pertaining to the Maximum Allowable Actual Charges (MAACs). A few even feel that if they do not raise their fees, the MAAC regulations cannot hurt them. That may not be true, since some physicians would have to roll some of their fees back to comply with the new regulations. Other misconceptions pertain to the method of calculating the MAACs. In addition, physicians in our community have tried to obtain from their carrier the pertinent background data, especially base period charges on which their MAACs were calculated by the carrier. Some have been unable to obtain the information or have obtained apparently incorrect data.

AMA recently asked physicians to take the initiative pertaining to their congressional representatives. 18 According to the AMA circular, "The vast majority of the congressmen have no clear idea how the MAAC provisions work. And they won't be willing to change the program unless they



FIGURE 4
Government bureaucrats should be civil servants

hear directly from you." The communication adds that "the major problem with the MAACs, however, relates to the use of the April-June 1984 base period. A legislative change will be necessary to resolve this problem. For this reason, it is essential that Congress hear from you about this issue."

RECOMMENDED SOLUTION: Several members of the committee should become well versed in the MAAC issues and advise our membership how to cope with such problems and gather the necessary data. These grass roots data should also be shared with the state and national medical specialty organizations.

• Problem #6: Lack of wellestablished communication channels between physicians and their staffs regarding the types and frequency of insurer-induced problems.

Improvement of communications between physicians about insurerinduced administrative problems could save considerable time for doctors as well as their staffs. Each doctor should not have to investigate and resolve on his own each type of bureaucratic problem.

In addition, some offices mean well and tend to shield their doctors from administrative headaches, i.e., they do not complain to their employers enough about the insurer-induced problems. However, in today's climate ignorance of insurer-induced headaches will not lead to bliss.

RECOMMENDED SOLUTION: IPRC should develop periodic meetings and/or newsletters for our medical community. The latest information about new bureaucratic techniques should be shared. It could include a library of data regarding carrier and insurer performance. It should include copies of studies, such as the ASIM report pertaining to Medicare carriers nationwide.11 It could also include materials by other local organizations on how to cope with problems created by the insurers. For instance, the Patient Advocate Committee has prepared a brochure entitled, "Do You Have Problems Getting Your Reimbursement from a Medicare Carrier?" which can

be useful for physicians who have to explain to their patients how the local carrier has mishandled clean claim reimbursements. ¹⁹ Seminar data about billing problems could also be shared. ²⁰

Conclusions

We believe that medically untrained or undertrained bureaucrats have assumed too much power and are grabbing for more. Therefore, the system should be reviewed and a proper balance, with easily enforceable responsibilities, should be developed. Organized medicine at the county, state, and national levels should help develop it. Our county physicians will participate via the above IPRC mechanism.

The insurers should not be treated as performers but should be required to provide their services promptly and accurately (Fig. 4). Government bureaucrats should act more like civil servants to earn their tax-dollar supported salaries. They should not be allowed to interfere in the physician-patient relationship by spreading misleading allegations about "customary" and "prevailing" fees to patients and the public. 1.2

The Committee mechanism may not be suitable for other county medical societies. Delegating such work to paid staff might be more efficient. However, the contact with practicing physicians and their billing staffs should be nurtured no matter what type of IPR mechanism is adopted.

Full implementation of the abovementioned solutions is beyond the resources of a small county medical society such as ours. Even a number of such societies in one state could not do it all. Therefore, we recommend a network of such entities. Data and work should be shared by neighboring county societies as well as state and national medical organizations. Some of the latter already have personnel^{11,17} who have dealt with a few aspects of these problems.

Perhaps these organizations would be willing to expand their work in this

area and help local IPR Committees with communications and logistics by establishing IPR Commissions at the state level and an IPR Council on the national level? Problems with insurer performance do affect patient care in other locales. Hence, they are a legitimate concern for state and national medical organizations. In addition, some of the problems are related to regulations developed for the entire nation. Although their impact has to be studied in each locale, solutions may have to be achieved on the federal level. Therefore, a local-national IPR network would be a suitable mechanism.

As IPR data accumulates, education of insurance industry personnel may become a major goal of IPRC. Insurers also have to deal with the medical information explosion, hence should be made aware of its magnitude (Figure 1). Middle and lower echelon HCFA and carrier personnel may take hardline adversarial attitudes to physicians because they think clear-cut guidelines are possible regarding medical procedures.

They may not be aware of the gaps in medical knowledge, which their overall chief, the secretary of the Department of Health and Human Services, outlined recently. Secretary Bowen stated, Lacking reliable guidelines for so many procedures, practicing physicians have little to go on when they have to decide whether surgery is best for their patient. Now, however, we are beginning to obtain results that

shed light on such questions." He added that "we need more studies like this." In other words, many of the guidelines may be premature since the necessary scientific studies have not yet been completed.

Insurers should also be informed how their computerized denial mistakes affect our patients. The better insurers will learn from their own mistakes and those of others and will improve their services. Our patients (their policy-holders) will benefit.

Then we will no longer hear horror stories such as the case history of the Medicare patient who allegedly avoided diagnostic work-up for early symptoms of cancer for nearly a year because the family was financially strapped since the carrier had delayed or denied reimbursement for services to the spouse. That particular patient had the diagnostic work-up only after the spouse died and members of the Patient Advocacy Committee had helped to convince the carrier to remedy the earlier reimbursement mistakes. However, by that time the cancer had spread.

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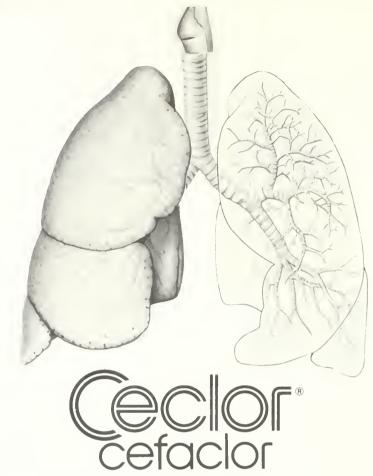
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Summary. Consult the package literature for prescribing intormation.

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CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS PENICILLINS AND CEPHA-LOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY POSSI-BLE REACTIONS INCLUDE ANAPHYLAXIS

Administer cautiously to allergic patients Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis

Precautions:

- · Discontinue Ceclor in the event of allergic reactions to it
- Prolonged use may result in overgrowth of nonsusceptible organisms
- Positive direct Coombs' tests have been reported during treatment with cephalosporins
 Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made
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- · Safety and elfectiveness have not been determined in pregnancy, lactation, and inlants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include:

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

- · Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of oseudomembranous colitis may appear either during or after antibiotic treat-
- Hypersensitivity reactions (including mor billiform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely. Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever): 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome
 • Cases of anaphylaxis have been reported, half
- of which have occurred in patients with a his-tory of penicillin allergy

 As with some penicillins and some other
- cephalosporins, transient hepatitis and chole-static jaundice have been reported rarely.
- · Rarely, reversible hyperactivity, nervousness,

insomnia, confusion, hypertonia, dizziness, and somnolence have been reported

 Other eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis; elevations in BUN or serum creatinine
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly). [072886R]

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Resident Physician Essay Contest

During the 1987-88 resident training year the Resident Medical Society of the ISMA and INDIANA MEDICINE will conduct a medical essay contest. All members of the Resident Medical Society are eligible to enter. Each author may choose the subject. Essays (medical articles) will be limited in length to 10 pages of typescript, properly margined and double spaced. Illustrations are encouraged and are to be included in the space limitation. Each article submitted should not have been published previously and should be credited to one author only.

Entries should be mailed to INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208, and be postmarked prior to Jan. 1, 1988.

Judges will consist of two specialists within the field of the article, three medical education directors from Indiana institutions with approved residency training programs, and one member of the Indiana Medicine Editorial Board.

Authors of the articles judged to be the four best will receive prizes of \$100 each, and an additional \$100 prize will be given to the best article of the four.

All prize-winning articles will be published in INDIANA MEDICINE. It is hoped that space will allow the publication of other entries to be chosen in the order of their numerical scores.

Essays will be judged on the following criteria: SCIENTIFIC MERIT: Research methods, data analysis, subject or patient population selection, control of variables, literature analysis.

APPLICABILITY: Usefulness of results to private practitioner, academician, researcher.

CONTENT: Depth of analysis, continuity of discussion supporting the main thesis, feasibility of conclusions.

INNOVATION: Uniqueness of idea, creativity, improvement of existing techniques, previously undiscovered data, advancement of basic understanding.

Each essay will be assigned a numerical score for each of the four judging criteria by each judge as follows:

- 0 Unacceptable 3 Good
- 1 Poor 4 Above average
- 2 Fair 5 Excellent



Annual Meeting

November 5-8, 1987 Thursday - Sunday

Radisson Plaza Hotel Keystone at the Crossing

Plan Now to Attend:

- House of Delegates Sessions
- Reference Committees
- Medical Section Meetings
- · IMPAC Luncheon and Meetin
- 50-Year Club Luncheon
- General Scientific Meeting on Socio-economic Issues
- President's Dinner and Dance Al Cobine and his Orchestra

Come Help us Examine: The Changing Face of Medicine

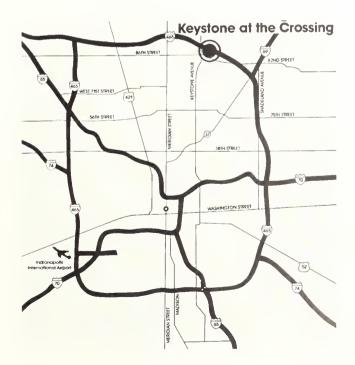
THURSDAY, Nov. 5

Abridged Schedule of Events

7-8 p.m. Indiana Psychiatric Society Dinner	8
7-8 p.m. Board of Trustees Reception	
8-11 p.m. Board of Trustees Dinner	S
8-9 p.m Indiana Psychiatric Society	8
General Membership Meeting	7
	9
FRIDAY, Nov. 6	N
·	N
7:30 a.m. Committee on Rules and Order of Business	N
8 a.m. Exhibits open	2
8 a.m. Board of Trustees Breakfast Meeting	6
9:30 a.m. First Session, House of Delegates	7
Noon Small County Delegates Meeting	- 1
1 p.m Fifty Year Club Reception	S
1:30 p.m. Ref. Committee 4 (Med. Educ. & Ins.)	8
2:30 p.m. Ref. Committee 3 (Legislation)	8

5-8 p.m. Practice Opportunity Reception
7 p.m. Ref. Committee 5 (Misc. Matters)
8 p.m Ref. Committee 6 (AMA Matters)
SATURDAY, Nov. 7
8 a.m. Board of Trustees Breakfast Meeting
7 a.m. Medical Section Meetings begin
9:30 a.m. ISMA Auxiliary Program
Noon Past President's Luncheon
Noon Editorial Board Luncheon Meeting
Noon IMPAC Reception and Luncheon
2-5 p.m
6:30 p.m. President's Reception
7:30 p.m. President's Dinner
CLINDAY N 0
SUNDAY, Nov. 8
8 a.m. Board of Trustees Breakfast Meeting
8 a.m. Medical Section Meetings begin
9 a.m. Final Session, House of Delegates
2 p.m. Board of Trustees Organizational Meeting,
Executive Committee Meeting

About the Convention Site



The 12-story Radisson Plaza Hotel is located in an Indianapolis shopping mall called Keystone at the Crossing, which is situated where Keystone Avenue crosses 86th Street at the I-465 interchange.

From downtown Indianapolis, take Meridian Street north to 86th Street; turn east on 86th Street to Keystone Avenue. From any point on or near the I-465 beltway, take the shortest route to the Keystone Avenue exit.

Keystone at the Crossing has achieved recognition as one of the finest shopping and dining complexes in the country. Its Fashion Mall features 60 fine stores and numerous restaurants and lounges. The hotel houses Waterson's, Whirligigs and the Keystone Cafe.

Dining spots in the Fashion Mall include Dalt's, the Greenhouse, Crackers Comedy Club, Cafe Espresso, Benihana of Tokyo, Ciatti's, James Tavern, Stuart Anderson's Cattle Company, T.G.I. Friday's, The Cork at the Crossing, and The Keystone Grill.

Several Guest Speakers on Tap for Section and General Scientific Meetings Saturday

AIDS, cancer and anticoagulation therapy will be discussed by three guest speakers during sessions sponsored by the Indiana Society of Internal Medicine on Saturday morning. The one-hour talks, beginning at 9 a.m. and lasting until noon, will be open to all

interested physicians.

Neil E. Irick, M.D., of Indianapolis will discuss "Innovative Methods of Pain Control in the Cancer Patient." He is medical director of the Hospice program at Methodist Hospital of Indiana. Dr. Irick, a 1971 graduate of Indiana University School of Medicine. is a member of the board of directors, Physicians Health Alliance, Indiana Association of Hospices, and the Mary Margaret Oncology Care and Research Center, Walther Medical Research Institute.

Virginia A. Caine, M.D. of Indianapolis will discuss "The Use of Retrovir for Treating AIDS." Dr. Caine, a 1976 graduate of the State University of New York Upstate Medical School, is an assistant professor of medicine, Division of Infectious Diseases, I.U. School of Medicine. She serves as director of Communicable Diseases, Marion County Health Department.

Finally, Jack E. Ansell, M.D., associate professor of medicine and pathology, University of Massachusetts Medical School, will discuss "Current Concepts in Anticoagulation Therapy." Dr. Ansell, who earned the M.D. degree in 1972 at the University of Virginia, is an attending physician with the Division of Hematology, University of Massachusetts Hospital. He is director of the school's Affiliated Hematology/Oncology Fellowship Program.

General Scientific Meeting

This year's General Scientific Meeting will be conducted Saturday



Irick



Ansell

Grav



Blinzinger

Boyle



Stroyny

from 2 p.m. to 5 p.m., and feature four speakers who will discuss the socioeconomic aspects of catastrophic health

Raymond A. Gray, D.D., of North Manchester, Ind., is president of the Indiana Federation of Older Hoosiers, Inc. He will discuss catastrophic care from the consumer's point of view. For six years before retiring, he was codirector with his wife of a retirement home in Boston.

Donald L. Blinzinger of Indianapolis has been administrator of the Indiana Department of Public Welfare since 1981 and will consider catastrophic care from the state government's standpoint. He is chairman of the Indiana Health Facilities Council and chairman of the Indiana Hospital Prospective Payment Study Commission.

Joseph F. Boyle, M.D., formerly of Los Angeles, has been executive vicepresident of the American Society of Internal Medicine since 1985. He is a past president of the AMA and of the California Medical Association. He presently serves as chairman of the AMA's Health Policy Agenda for the American People project, and will discuss catastrophic care from the physician's viewpoint. Dr. Boyle, a Temple University graduate, was an associate clinical professor of medicine at the University of Southern California School of Medicine for many years.

Chester C. Stroyny has been the acting regional administrator of the Region V Health Care Financing Administration (HCFA), Chicago Regional Office, since July 6 of this year. He is responsible for the direction and oversight of the Medicare and Medicaid programs in HCFA Region V, which covers Illinois, Indiana, Ohio, Michigan, Minnesota and Wisconsin. His talk will encompass catastrophic health care as seen through the eyes of the federal government.

Hudson Institute Executive Is IMPAC Guest Speaker

Mitchell E. Daniels Jr., president and chief executive officer of the Hudson Institute, will discuss "Emerging Trends and Their Impact on Health Care" during the IMPAC luncheon on Saturday.

Mr. Daniels recently resigned as assistant to the President for political and intergovernmental affairs. At the White House he served as President Reagan's chief political advisor and as the administration's liaison to the nation's state and local officials.

In December 1984, Daniels completed service as executive director of the National Republican Senatorial Committee. Previously, he had managed each of U.S. Sen. Richard Lugar's winning election campaigns, the first of which set an all-time plurality record for Indiana statewide elections.

Daniels, 38, is a graduate of Princeton's Woodrow Wilson School of Public and International Affairs and the Georgetown University Law Center. He is a member of the Indiana Bar Association and a partner in the law firm of Baker and Daniels. He is a member of the board of directors of the Indiana National Bank, the University of Indianapolis and a variety of other business and non-profit institutions.



Daniels

About the Delegates

The ISMA House of Delegates will convene at 9 a.m., Nov. 6, in the Plaza Ballroom, Radisson Plaza Hotel, Indianapolis. It will reconvene for its second (final) session at the same location at 9 a.m., Nov. 8.

This year's 212 voting delegates represent 81 county medical societies, 17 past presidents, 14 trustees, the Resident Medical Society and the Student Medical Society. Ex-officio members (president, president-elect, executive director, treasurer, assistant treasurer, speaker, vice-speaker and AMA delegates) may not vote; in the case of a tie, the speaker casts the deciding vote.

All delegates must present their credentials card, certified by their county medical society, before being seated in the House.

Resolutions considered by the House this year, and the actions taken on them, will appear in the January 1988 issue of INDIANA MEDICINE.

Al Cobine Band Slated for President's Dinner

The 40-piece Al Cobine Band will provide the musical entertainment during the President's Dinner Saturday night.

"Big Al" Cobine and his band have played back-up for some of America's

biggest stars, including Johnny Mathis, Wayne Newton, Elvis Presley, John Denver, Andy Williams, Bob Hope, Tony Bennett and Pia Zadora.

Cobine, originally from Bloomington, used to moonlight during his student days as a band leader at the old Indiana Roof; the Ballroom, located atop the Indiana Repertory Theater, was recently renovated and re-opened. During an appearance there earlier this year, after an absence of several years, the Al Cobine Band drew an estimated 1,000 dance lovers.

A reviewer for *The Indianapolis Star* said Big Al kept the dance floor crowded all night. He entertained guests with a variety of classic and contemporary dance tunes, ranging from simple ballads to fancy fox trots, sambas, rhumbas, tangos and polkas.

As a special musical introduction after the President's Dinner, the band will perform a half-hour special on The Best of Hoagie Carmichael.

President's Night Saturday, November 7

6:30 p.m.—Reception, Plaza Ballroom 7:30 p.m.—Dinner, Plaza Ballroom

9:00 p.m. - Dance (The Al Cobine Band)

Menu: Appetizer: Seafood Vol au Vent

Spinach Salad

Tournedos Marchand de Vin (beef)

Fresh Vegetables
Twice Baked Potato
Dessert: Crepes Nancie



Shirley Thompson Khalouf, M.D.
President
Indiana State Medical Association
1986-1987

Presidents of ISMA Since Its Organization

Medical Convention	Elected	Served		Llected	Served
*Livingston Dunlap, Indianapolis	1849	1849	*Frank B. Wynn, Indianapolis	1914	1915
Medical Society			*George F Keiper, Lafayette	1915	1916
Medical Society *William T.S. Cornett, Versailles	1849	1850	*John H. Oliver, Indianapolis	1916	1917
*Ashahel Clapp, New Albany	1850	1851	*Ioseph Rilus Eastman, Indianapolis	1917	1918
*George W. Mears, Indianapolis	1851	1852	*William H Stemm, North Vernon	1918	1919
*Jeremiah H. Brower, Lawrenceburg	1852	1853	*Charles H. McCully, Logansport *David Ross, Indianapolis	1919	1920
*Elizur H. Deming, Lalayette	1853	1854	*William R Davidson, Evansville	1920 1921	1921 1922
*Madison J. Bray, Evansville	1854	1855	*Charles H. Good, Huntington	1922	1923
*William Lomax, Marion	1855	1856	*Samuel E. Earp, Indianapolis	1923	1924
*Daniel Meeker, LaPorte	1856	1857	*Eldridge M. Shanklin, Hammond	1924	1925
*Talhot Bullard, Indianapolis	1857	1858			
*Nathan Johnson, Cambridge City	1858	1859	Medical Association		
*David Hutchinson, Mooresville	1859	1860	*Charles N. Comhs, Terre Haute	1925	1926
*Benjamin S. Woodworth, Ft. Wayne	1860	1861	*Frank W. Cregor, Indianapolis	1926	1927
*Theophilus Parvin, Indianapolis	1861	1862	*George R. Damels, Marion	1926	1928
*James F. Hihherd, Richmond	1862	1863	*Charles E Gillespie, Seymour	1927	1929
*John Sloan, New Albany	1863	107.1	*Angus C. McDonald, Warsaw	1928	1930
*John Moffett (acting), Rushville	1863 1864	1864	*Alois B. Graham, Indianapolis .	1929	1931
*Samuel 1 Linton, Columbus .	1864	1865	*Franklin S. Crockett, Lafayette	1930	1932
*Wilson Lockhart (acting), Danville *Myron H. Harding, Lawrencehurg	1865	1866	*Joseph H. Weinstein, Terre Haute	1931	1933
*Vierling Kersey, Richmond	1866	1867	*Everett E. Padgett, Indianapolis	1932	1934
*John S. Bohbs, Indianapolis	1867	1868	*Walter J. Leach, New Albany . *Roscoe I. Sensenich, South Bend	1933	1935
*Nathaniel Field, Jeffersonville	1868	1869		1934 1935	1936 1937
*George Sutton, Aurora	1869	1870	*Edmund D. Clark, Indianapolis *Herman M. Baker, Evansville	1935	1937
*Robert N Todd, Indianapolis	1870	1871	*Edmund M. Van Buskirk, Ft. Wayne	1937	1939
*Henry P. Ayres, It. Wayne	1871	1872	*Karl R. Ruddell, Indianapolis	1938	1940
*Joel Pennington, Milton	1872	1873	*Albert M. Mitchell, Terre Haute	1939	1941
*Isaac Casselherry, Evansville	1873		*Maynard A. Austin, Anderson	1940	1942
*Wilson Hobbs (acting), Knightstown	1873	1874	*Carl H. McCaskey, Indianapolis	1941	1943
*Richard E. Houghton, Richmond	1874	1875	*Jacob T. Oliphant, Farmerburg	1942	1944
*John H Hełm, Peru .	1875	1876	*Nelson K. Forster, Hammond .	1943	1945
*Samuel S. Boyd, Dublin	1876	1877	*Jesse E. Ferrell, Fortville	1944	1946
*Luther D. Waterman, Indianapolis .	1877	1878	*Eloyd T Romherger, Latayette.	1945	1947
*Louis Humphreys, South Bend	1878	1070	*Cleon A. Nafe, Indianapolis .	1946	1948
*Benji. Newland (acting), Bedford (v.p.)	1878	1879	*Augustus P. Hauss, New Albany	1947	1949
*Jacob R. Weist, Richmond	1879 1880	1880 1881	*C. S. Black, Warren	1948	1950
*Thomas B. Harvey, Indianapolis *Marshall Sexton, Rushville	1881	1882	*Alfred Ellison, South Bend .	1949 1950	1951 1952
*William 11. Bell, Logansport	1882	1883	*J. William Wright, Indianapolis	1951	1952
*Samuel L. Mumlord, Princeton	1883	1884	*Paul D. Crimm, Evansville *Wm. Harry Howard, Hammond	1952	1954
*James H. Woodburn, Indianapolis	1884	1885	*Walter L. Portteus, Eranklin	1953	1955
*James S. Gregg, Ft. Wayne	1885	1886	*Walter U. Kennedy, New Castle	1954	1956
*General W. H. Kemper, Muncie	1886	1887	*Elton R. Clarke, Kokomo	1955	1957
*Samuel 11. Charlton, Seymour	1887	1888	M. C. Topping, Terre Haute	1956	1958
*William H. Wishard, Indianapolis	1888	1889	Kenneth L. Olson, South Bend	1957	1959
*James D. Gatch, Lawrencehurg .	1889	1890	*Earl W. Mericle, Indianapolis.	1958	1960
*Gonsolvo C. Smythe, Greencastle	1890	1891	*Guy A Owsley, Hartford City.	1959	1961
*Edwin Walker, Evansville	1891	1892	*Harry R. Stimson, Gary	1960	1962
*George I: Beasley, Lafayette.	1892	1893	*Maurice E. Glock, Fort Wayne	1961	1963
*Charles A. Daugherty, South Bend	1893	1894	Donald E. Wood, Indianapolis	1962	1964
*Elijah S. felder, Indianapolis	1894	1906	Joseph M. Black, Seymour	1963	1965
*Charles S. Bond (acting), Richmond	1894	1895	*Kenneth O. Neumann, Lafayette	1964	1966
*Miles T. Porter, Et. Wayne	1895	1896 1897	*Eugene S. Rifner, Van Buren.	1965	1967
*James 11 Eord, Wabash *William N. Wishard, Indianapolis	1896 1897	1898	*G. O. Larson, LaPorte	1966 1967	1968 1969
*John C. Sexton, Rushville	1898	1899	Patrick J. V. Corcoran, Evansville	1968	1909
*Walker Schell, Terre Haute	1899	1900	Lowell H. Steen, Hammond Malcolm O. Scamahorn, Pittsboro	1969	1971
*George W McCaskey, Ft. Wayne	1900	1901	Peter R. Petrich, Attica	1970	1972
*Alemhert W. Brayton, Indianapolis	1901	1902	*James H. Gosman, Indianapolis	1971	1973
*John B Berteling, South Bend	1902	1903	Joe Dukes, Dugger	1972	1974
*Jonas Stewart, Anderson	1903	1904	Gilbert M. Wilhelmus, Evansville	1973	1975
*George 1. MacCoy, Columbus	1904	1905	Vincent J. Santare, Munster	1974	1976
*George H. Grant, Richmond	1905	1906	*John W. Beeler, Indianapolis	1975	1977
*George J. Cook, Indianapolis.	1906	1907	*Eli Goodman, Charlestown .	1976	1978
*David C. Peyton, Jeffersonville	1907	1908	*James A. Harshman, Kokomo .	1977	1978
*George D. Kahlo, french Lick	1908	1909	*Arvine G. Popplewell, Indianapolis	1978	1980
*Thomas C. Kennedy, Shelhyville .	1909	1910	Alvin J. Haley, Carmel	1979	1981
*Frederick C. Heath, Indianapolis	1910	1911	Martin J. O'Neill, Valparaiso .	1980	1982
*William F. Howat, Hammond	1911	1912	John A. Knote, Lafayette	1981	1983
*A. C. Kimberlin, Indianapolis	1912	1913	George T. Eukemeyer, Indianapolis	1982	1984
*John P. Salb, Jasper	1913	1914	Lawrence E. Allen, Anderson	1983	1985
			Paul Siebenmorgen, Terre Haute	1984	1986
*Deceased			Shirley Thompson Khalouf, Marion	1985	1987

THE INDIANA STATE MEDICAL ASSOCIATION

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- 11 Jack W. Higgins, Kokomo (1987)
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- 11 Michael S. Liebner, Logansport (1989) 12-Thomas A. Felger, Fort Wayne (1989)
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George T. Lukemeyer, Indianapolis (1988)

Robert M. Seibel, Nashville (1988)

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- 2-Pres: Charles E. Hendrix, Vincennes Secv: Jerome E. Melchior, Vincennes Annual Meeting: 1988, Knox County 3-Pres: Marvin L. McClain, Scottsburg

Annual Meeting: 1988

- Pres: Ricardo Domingo, Greensburg Secy: Cora Gregorio, Greensburg Annual Meeting: 1988, Greensburg
- 5-Pres: William L. Strecker, Terre Haute Secy: Peggy Sankey-Swaim, Rockville Annual Meeting: Oct. 7, 1987, Terre Haute
- 6-Pres: William A. Nesbitt, Connersville Secy: Daniel P. Rains, New Castle Annual Meeting: May 11, 1988, New Castle
- Pres: Peter L. Winters, Indianapolis Secy: H. Marshall Trusler, Indianapolis Annual Meeting: April 1987, Indianapolis
- 8-Pres: Joseph Copeland, Anderson Secy: Kenneth A. Shaver, Anderson Annual Meeting: June 3, 1987, Portland
- 9-Pres: Dallas Coate, Lebanon Secy: Max N. Hoffman, Covington Annual Meeting: June 22, 1988, Lebanon 10 – Pres: Vincent J. Santare, Munster
- Secy: Barron M. Palmer, Hammond Annual Meeting: Oct. 14, 1987, Hobart
- 11-Pres: Michael S. Liebner, Logansport Secy: Fred C. Poehler, LaFontaine Annual Meeting: Sept. 16, 1987, Logansport
- 12-Pres: Anthony Donesa, Fort Wayne Secy: Mark S. Souder, Auburn Annual Meeting: Sept. 17, 1987
- 13-Pres: Jon B. Kubley, Plymouth Secy: Thomas J. Eberts, South Bend Annual Meeting: Sept. 13, 1988, Plymouth

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1937-1987

Indiana State Medical Association

Fifty Year Club Honor Roll

This year several physician members of the Indiana State Medical Association are being recognized for their fifty years of service as loyal and devoted practitioners of medicine. They join the long list of distinguished Hoosier physicians who have been inducted into the Fifty Year Club since its inception in 1948.

The Indiana State Medical Association wishes to formally acknowledge the unselfish service to their patients and profession contributed by the following physicians:

Edward F. Bloemker, M.D., Indianapolis, Marion County.

A. W. Bloom, M.D., Kelleys Island, Ohio, Grant County.

Richard S. Bloomer, M.D., Rockville, Parke-Vermillion County.

Kenneth H. Brown, M.D., New Albany, Floyd County.

Arthur B. Burnett, M.D., New Castle, Henry County.

Melvin H. Coffel, M.D., Vincennes, Knox County. Walter A. Compton, M.D., Elkhart, Elkhart County. Naomi L. Dalton, M.D., Bloomington, Owen-Monroe ounty.

Eugene J. DeGrazia, M.D., Marathon, Fla., Porter County.

Harold L. Ericson, M.D., Floral City, Fla., Tipton County.

Max Feldman, M.D., Mountain View, Calif., St. Joseph County.

James L. Fuelling, M.D., Indianapolis, Grant County.

Ramon A. Henderson, M.D., Muncie, Delaware-Blackford County.

Richard G. Horswell, M.D., Bristol, Elkhart County. Lester H. Hoyt, M.D., Indianapolis, Marion County. Robert G. Husted, M.D., Munster, Lake County. Arnold L. Johnson, M.D., Gary, Lake County.

Thomas W. Johnson, M.D., Palm City, Fla., Marion County.

Richard N. Kent, M.D., Fort Wayne, Fort Wayne-Allen County.

Joseph L. Larmore, M.D., Anderson, Madison County.

Emanuel C. Liss, M.D., South Bend, St. Joseph County.

Mortimer Mann, M.D., Indianapolis, Marion County. Ott B. McAtee, M.D., Madison, Jefferson-Switzerland County.

Cecil G. McEachern, M.D., Fort Wayne, Fort Wayne-Allen County.

Herman A. Meyer, M.D., Fort Wayne, Fort Wayne-Allen County.

Richard C. Miller, M.D., Shelbyville, Shelby County. Robert J. Miller, M.D., Martinsville, Morgan County. William A. Paff, M.D., Elkhart, Elkhart County.

Walter F. Ramage, M.D., Indianapolis, Marion County.

Floyd T. Romberger, M.D., Indianapolis, Marion County.

Lloyd E. Rosenbaum, M.D., Anderson, Madison County.

Harry G. Rotman, M.D., Jasonville, Greene County. Robert A. Royster, M.D., Evansville, Vanderburgh County.

Frank M. Scott, M.D., South Bend, St. Joseph County.

J. L. Sims, M.D., New Smyrna Beach, Fla., Marion County.

Joseph J. Spalding, M.D., Indianapolis, Marion County.

Frederic Spencer, M.D., Vincennes, Knox County. Hugh H. Steele, M.D., West Lafayette, Tippecanoe County.

William C. Strang, M.D., Indianapolis, Marion County.

 $\label{eq:mary_A.Surratt, M.D., Indianapolis, Marion} \\ \text{County.}$

John R. Taylor, M.D., Palestine, Ill., Sullivan County.

Joseph A. Teegarden, M.D., East Chicago, Lake County.

David B. Templin, M.D., Lowell, Lake County.

Wallace S. Tirman, M.D., Plymouth, St. Joseph County.

James N. Topolgus Sr., M.D., Bloomington, Owen-Monroe County.

William F. Tranter, M.D., Fort Myers, Fla., Tipton County.

Warren S. Tücker, M.D., Trafalgar, Marion County. Thomas C. Tyrrell, M.D., Munster, Lake County.

Robert M. Vandivier, M.D., Franklin, Marion County.

Francis M. Williams, M.D., Anderson, Madison County.

Robert H. Williams, M.D., Pendleton, Madison County.

Ralph E. Zwickel, M.D., Newburgh, Vanderburgh County.

Commercial Exhibitors

Computer

Medical Accounts Group Ranac Computer Corporation Medical Payment Systems Versacom Advanced Medical Information Systems

Financial Institutions

Indiana National Bank/Kimmerling, Myers & Co. Crowe, Crizek & Company

Insurance Agencies

American Physicians Life Health Plus HMO Life Associates Williams-Townsend Associates

Medical Laboratories

Pathologist Associated Medical Laboratories DataChem, Inc.
The Medical Laboratory

Governmental Agencies

Navy Recruiting District Indiana Army National Guard

Pharmaceutical

Mead Johnson Pharmaceuticals
Dupont Pharmaceuticals
Eli Lilly & Company/Dista Products
Bristol-Myers
Riker Laboratories/3M
Miles Pharmaceuticals
Rorer Pharmaceuticals
Smith, Kline & French Laboratories
Boehringer Ingelheim Pharmaceuticals
Hoffman LaRoche

Other

Landon & Shaw Securities, Inc. Indiana Heart Institute Smith Barney AHM Graves Koala Centers Immke Circle Leasing Century Cellular Network

Practice Opportunity Session Exhibitors

Hospitals

Morgan County Memorial Community Hospital Reid Memorial Hospital Howard Community Hospital St. Joseph Hospital Clinton County Hospital Jackson County Schneck Memorial Johnson County Memorial Jay County Hospital Mary Sherman Hospital Goshen General Hospital Starke Memorial Hospital Clinic of Family Medicine Greene County General

Other

U.S. Navy Challenger & Hunt Midwest Medical Management, Inc. Marion Mason & Associates, Inc.

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ISMA TRUSTEE DISTRICTS

Annual Reports

Board of Trustees MICHAEL O. MELLINGER, M.D. CHAIRMAN

Quality of medical care—this seems to be the underlying issue in most of the substantive problems your Board of Trustees has dealt with during the past year. Cost containment efforts continue to be in conflict with maintenance of quality all too often.

Legislatively, it was a very good year for the patients of Indiana. This was the year of the long session for the Indiana General Assembly, More than 200 pieces of legislation involving health care were introduced. ISMA, through lobbying efforts, was able to prevent the passage of a bill which would have totally changed the statute of limitations on medical malpractice claims and substantially added to the medical expenses of every Hoosier family. Efforts to limit physician dispensing were also defeated in spite of a concentrated effort by the Indiana Pharmacists Association. The surcharge for the Patients Compensation Fund was increased to 125% as a result of an anticipated shortfall in the fund. Although the total leaves Indiana physicians paying substantially lower premium rates than in surrounding states, we still feel that protection and defense of the fund is a major problem. Efforts are continuing to shore up that defense.

Communication within the membership of ISMA continues to be a difficult problem. The Board and Future Planning Committee have attempted to improve the situation with several new ideas. Basically, we hope to integrate leadership of component societies and state and local specialty societies on a district level and also are studying a brief midyear conference on the state level. Any thoughts or suggestions would be welcomed by your trustee or Future Planning Committee chairman Bill VanNess, M.D.

Efforts toward patient advocacy and assisting in dealing with third-party payors has been a central theme

throughout the year. Local efforts, particularly in Marion, have been extremely effective and uncovered some major inequities. Because of variability in local needs, a statewide program seems impractical at this time. ISMA has acted to encourage local component societies to address this problem. For the present, ISMA hopes to serve as a central repository for information and assistance in these efforts.

A recent AMA poll of Hoosier patients revealed 55% believe "Doctors don't care as much as they used to." I expect this image to improve. If image is indeed a reflection of reality, and I believe it is, then the fact that doctors do care about compromise in quality must become apparent. Wider distribution of "Healthy, Happy and Wise," "Your Hoosier Doctor Says" columns and "Physician of the Day" for the legislature have all been positive public relations moves.

However, when we talk about public relations, let's not forget our most effective tool: one-on-one communication with our patients. All we have to do is take the time to tell it like it is!

Executive Committee SHIRLEY THOMPSON KHALOUF, M.D., CHAIRMAN

It has been an eventful year for the ISMA Executive Committee. We have reviewed numerous issues and made recommendations. The Executive Committee met informally with the Medical Licensing Board to discuss several topics including treatment of obesity, the Prescription Abuse Data Synthesis (PADS) Program and the need for increased physician involvement in the rules and regulations process.

We discussed the Medical Licensing Board's summary suspension procedure and made several recommendations including: 1) that the remedy of summary suspension should only be used in those cases where a clear and present danger to the public exists; 2) in other cases the respondent should be given notice of charges and an opportunity to be heard prior to the board's issuance of a suspension, and 3) if an immediate hearing is needed, the hearing officer may conduct the summary suspension hearing with his decision constituting a final decision when approved by the Medical Licensing Board.

Other issues of concern to the Executive Committee during the year included: draft rules requiring the State Board of Health to establish a Birth Problems Registry and the Department of Insurance's 1987 legislative proposals to change the Medical Malpractice Act. We also reviewed the U.S. General Accounting Office's "Medical Malpractice Case Study on Indiana." The report identifies how states have addressed medical malpractice insurance problems and have determined changes in insurance costs. It includes information regarding the number of claims filed and the average amount paid per claim.

The Executive Committee approved a request from the Indiana State Board of Health to sponsor a dinner and reception for AIDS experts who addressed the "AIDS in the Heartland" conference last February. This event provided an opportunity for ISMA leadership to discuss research and treatment of the disease. In another AIDS-related matter, the Executive Committee approved a mailing to notify the membership of guidelines for AIDS testing of transfusion recipients.

Concerning the AMA delegation and campaigns for AMA offices, it was recommended that the Board: develop a fund-raising committee for Dr. Petrich's campaign for AMA vice-speaker; set aside a portion of each delegate's stipend for attending the meeting as a contribution to the campaign fund, and require future candidates to present to the Executive Committee an outline of their commitment, the viability of their candidacy and a proposed budget.

Funds were allocated for a "Physi-

cian of the Day" program for the Indiana General Assembly.

After reviewing a membership survey on the ISMA Annual Convention, the Executive Committee asked the Commission on Convention Arrangements to condense the annual event as much as possible.

Guests invited to appear before the committee included Insurance Commissioner Harry Eakin, who gave an update on the Patients Compensation Fund. Committee members asked Mr. Eakin numerous questions about the number of claims filed, type of claims, the amount of payments, and the hiring of a claims manager.

Another presentation to the committee was by Tom Hanstrom of Peerview, who requested ISMA's participation in an analysis of various hospital markets and the variation in their performance rates. The Executive Committee determined that some essential data was lacking in the proposal and declined to participate.

Ross L. Egger, M.D., Blue Cross/Blue Shield medical director, discussed GM contract restrictions. He answered questions regarding reimbursement for tests and preadmission certification.

The Executive Committee declined a request from Blue Cross/Blue Shield for \$90,000 for a program to train elderly individuals to assist their contemporaries in understanding their Medicare claim benefits.

By recommendation of the committee, ISMA informed Governor Robert Orr of the association's endorsement of the proposed physician assistant rules.

Additionally, the Executive Committee reviewed a proposed resolution to eliminate those committees, commissions and ad hoc committees that are no longer functioning. A staff report on the attendance, expense and activities of each committee and commission will be reviewed to determine which should be dissolved.

Concerning the Young Physicians Section, an ad hoc committee was formed to consider ways to assimilate young physicians into organized medicine.

This is a summary report as of the July 15 deadline for committee reports. Therefore, it does not include activities during the final three months of ISMA's year.

My thanks to Executive Committee members and staff for their diligence during my term as ISMA president.

First District Trustee E. DEVERRE GOURIEUX, M.D.

I am pleased to report to you on some of the activities we participated in as members of the First District Medical Society. In spite of the distance from Evansville to Indianapolis, many First District physicians participate on ISMA Commissions and the First District Medical Society Board of Directors. I would encourage you to talk with these physicians and express your opinions. They are the decision-makers and participants representing this district on a state level.

Few county societies have the financial resources to monitor and influence the legislature. Therefore, we depend on the expertise of the ISMA staff for a majority of our legislative information. They have done a fine job in representing the interests of physicians of the First District.

A number of physicians were involved in legislative efforts. Dr. Bryant Bloss represented the First District on the ISMA Commission on Legislation. As his term ends, I would like to commend and thank him for a job well done. Dr. Bruce Romick will be representing the First District on the ISMA Commission on Legislation. Every year, more legislation which impacts on the practice of medicine is introduced—some good, some bad. If we as physicians are to preserve medicine as a profession, it becomes increasingly important to exercise our

rights by making our concerns known to our legislators.

I would also like to welcome Dr. Theodore Stransky as the First District's representative on the ISMA Commission on Medical Services. Dr. Stransky replaces Dr. L. Ray Stewart, whose term has expired. I'm sure Dr. Stransky will enjoy this commission with its diverse areas of responsibility.

Dr. Eugene Hendershot and Mrs. Sylvia Dulay will be serving on the IMPAC Board. The IMPAC Board is the Indiana State Medical Association's Political Action Committee. We welcome Dr. Hendershot and Mrs. Dulay to their new positions.

The 1986 ISMA convention was held in Indianapolis October 30-November 2. The majority of our delegates were present. We met several times to interview candidates and met with other groups to gather votes for our candidate for AMA delegate, Dr. Gilbert Wilhelmus. I would like to thank Dr. Wilhelmus for his many accomplishments as a champion for organized medicine.

I would like to acknowledge the efforts of Dr. Shirley Khalouf as president of ISMA to strengthen communications between ISMA and First District.

It is important that we continue to be involved with our state medical association to represent our interests. Many First District physicians have donated their time to representing the interests at the county, district, state and national levels. To those physicians who are just starting out in our profession, it is important that you continue to represent the interest of your medical community on all levels: county, district, state and national. I urge you to continue the work of those who have gone before you and who have influenced in a most positive way the practice of medicine.

Second District Trustee PAUL WENZLER, M.D.

At the Board of Trustees meeting 3-29-87, Ron Dyer, ISMA attorney, reported that Winona/Blues litigation involved that hospital and could not be applied on a statewide basis. Blue Shield would fight any statewide attempt to undermine the Preferred Care Program already in place. The Winona Hospital Staff had filed suit against the Blues' Preferred Care Program, citing antitrust violations and discriminations in directing patients to Preferred Care hospitals. This case was settled out of court.

The trustees have voted to accept a contract with Medical Payment Systems. The more the Medical Payment Systems is used, the larger the rebate to the component medical societies and to ISMA. The only problem is that the system is not compatible with some of the computers which are in doctors' offices.

The Young Physicians Section to the AMA seems to be active. Mark Hochstetler, M.D., was ISMA's delegate to the 1986 Interim AMA meeting in Las Vegas.

Rick King, executive director, reported the original IPRO grant of \$100,000 is now between \$10,000 and \$15,000—with strings attached. We will probably not get involved in this.

Dr. Woodrow Myers, Indiana State Board of Health, has been active in trying to get the Breast Screening Awareness Project underway. After discussing the issue, the Board voted to support the program. A mobile van will tour Indiana, conduct mammograms, and report the findings to doctors. Some questions have been raised concerning professional liability and follow-up of patients, and these are under advisability. Also, more data is requested on registered mammography units in Indiana.

The ISMA hosted a legislative reception for senators and representatives. The Columbia Club function was well attended and there was a good ex-

change of information between the ISMA staff, physicians, auxiliary, and the legislators.

The Indiana Medical History Museum has asked that voluntary contribution of dues be increased from \$5 to \$10 for the coming year. This was okayed by the trustees.

Legislative reports are sent to the local societies — be sure and read these reports!

This year, ISMA has operated in the black—even with lower interest and decreased money for various projects.

Fred Dahling, M.D., speaker of the House, has sent out the reference committee appointments. I am looking forward to seeing attendees from the Second District at the ISMA Annual Meeting at the Radisson Plaza Hotel in Indianapolis, November 5-8.

Dr. Frank Ramsey, editor of IN DIANA MEDICINE, said that the Indiana Medical Foundation, Inc., is now in place and contributions can be made in memory of deceased relatives or friends. Any bequest will help to finance further improvements of INDIANA MEDICINE.

Janna Kosinski joined the ISMA staff June 22 and is the new field representative for southern Indiana. She is very knowledgeable, pleasant, and has a good background from her work with the Indiana Cancer Society, where she was responsible for public and educational programs. As time is available, she will contact each doctor in the Second District.

The Long-Range Planning Committee has suggested that four district meetings per year be held. So that we may have an exchange of ideas and current problems, we will probably attempt to have representatives from the different areas on a quarterly basis. This will be discussed later.

Third District Trustee THOMAS NEATHAMER, M.D.

In my annual report last year, I told you about several areas in which ISMA

should increase its activity and watchfulness. Let's see what kind of report card we've earned this year in those areas.

I would give an A + to member services. Mike Huntley has aided us in assembling an excellent package of services and benefits available to all ISMA members. As a result, more dues income should be generated. Our insurance programs seem to be holding their own.

Our influence on the new State Board of Health programs rates at least a B+. We have succeeded in keeping the programs beneficial to our patients without changing the programs and practices already in place.

We drop down to a C when it comes to dealing with Peerview and their harassment. There are still many problems to solve. DRG codes are still being changed and many admissions are denied unjustly. Our members spend more and more time defending themselves and seem to incur more and more unnecessary costs. Another disappointment: Peerview has withdrawn its offer of a grant.

Our poorest score, however, is with the insurance companies. Somehow, we must curtail their activities in certification, recertification, denying charges, and generally trying to control completely the practice of medicine. You all know and have experienced the effects of some of their ridiculous and outlandish demands. One way to slow this down would be to make them liable for the costs incurred from these tactics. This idea is currently being discussed with the insurance commissioner.

Now, what can you do? Physicians must become more politically active. Individual letters regarding medical issues to our senators, congressmen, and legislators are still very effective. Do not join an HMO or program that limits your ability to provide the best in medical care.

As they say in the drug program, "Just Say No." Educate your patients. Physicians comprise a very small part

of the total population, but patients comprise 100%.

Although many of these points have been made before, they are still true and become more urgent every day. If we can improve our scores in the areas I've mentioned, we will have made a profound difference.

Fourth District Trustee WHLIAM E. COOPER, M.D.

The Fourth District Medical Society held its annual meeting on Wednesday, May 6, 1987, at the Jawacdah Farm in Batesville, Indiana. The meeting was preceded by a fine afternoon of golf with Dr. Daly Walker of Columbus, Indiana, winning the low gross championship trophy.

At that meeting, I voiced concern as to the effectiveness of our present "legislative alert system" and our ability to bring these legislative alerts which come from both ISMA as well as AMA headquarters for individual action within our district.

A survey taken showed very little is being done regarding the distribution of information to our doctors and, of course, very few opinions go from our doctors to Congress. It is my proposal that we identify one person in each of our county medical societies who will be responsible for receiving, copying, and forwarding the "alerts" to their particular medical society's membership. It is only through this directed effort that we can assure that legislative matters can receive full attention and disposition.

Secondly, I propose to have a panel composed of the presidents of our member medical societies at each district meeting. It is through this mechanism that we can listen to the problems of our memberships and discuss them right at that time.

I am pleased to relate that Ms. Janna Kosinski has been appointed field representative for our Fourth District and I know we will all welcome her to our meetings. I plan to attend as many medical society meetings as I can within the coming year and will look forward to discussing your problems and their solutions.

Fifth District Trustee BENNY S. KO. M.D.

Now that the year has come and gone, I think as members of the Indiana State Medical Association it is right for each of us to ask the question, "What has ISMA done for me this past year?"

Well, let me answer that by highlighting some of the victories that we have won in the last state legislative session. We have succeeded in preventing the passage of a bill which would have changed the malpractice statute of limitation from the current two vears from the date of occurrences to the date of discovery. We have once again defeated legislation which would have limited physicians' ability to dispense medication from offices. We were also successful in promoting passage of a law which allows physicians to be appointed to the governing board of county hospitals. On the national level, AMA so far this year has been able to block Congress' effort of imposing physician DRGs. I think this is a track record that we can all be satisfied with, and I would like to remind everyone it did not come by chance, but rather through the hard work of your ISMA staff and the colleagues you have elected to represent vou at ISMA.

So, in return, please ask yourself the following: Have you been active in your own professional organization, the ISMA, the county medical society, the AMA? If not, why not? The road ahead of us is not going to get any easier. Unless you are perfectly happy with the status quo and have no concern about the future direction of our profession, then get active, get involved, speak up and be counted.

The 1986 Fifth District meeting was held at the Terre Haute Country Club. Dr. Frank Swaim, the president, and

his charming wife, Dr. Peggy Sankey-Swaim, also our district secretary/treasurer, hosted an excellent meeting. The turnout was good. At the time of this report, the 1987 district meeting is scheduled to be held at the Terre Haute Country Club on October 7. Dr. William Strecker, 1987 Fifth District president, promised the meeting would be a fun-filled, exciting occasion.

A number of physicians from our district, including our past ISMA president, Dr. Siebenmorgen, and my humble self, served as the voluntary physician during this past legislative session. It was both a meaningful and educational experience, and I know it has created good will and understanding between the law makers and physicians. During this past year, I have been able to attend all the ISMA Board meetings, as I had the previous year. It is my honor and pleasure to represent you, and I will strive to do an even better job during this coming year. Please feel free to call and discuss with me any issues of your concern.

In closing, let me say that now, more than ever, ISMA needs you. And you, now more than ever, need ISMA.

Sixth District Trustee C.G. CLARKSON, M.D.

This year the Sixth District Medical Society met on May 13, at Forrest Hills Country Club in Richmond, Indiana. Approximately 25 members were present. The meeting was called to order by the president, Douglas Morrell of Connersville. Dr. Morrell introduced dignitaries who were present. The minutes from May 1986 were approved. Robert Warren, M.D., presented the treasurer's report with the balance as of May 1, 1987, being \$2,736. The treasurer's report was approved. An election of officers was then accomplished. William Nesbitt, M.D., of Connersville, will be president. Daniel Rains, M.D., New Castle, will be secretary/treasurer. The next meeting of the Sixth District will be hosted at

Henry County on the second Wednesday in May of 1988. There was no old business to conduct. As to new business, Robert Warren, M.D., recommended that the secretary/treasurer from the previous year present the minutes and treasurer's report since he would be the one who had prepared it. This was approved and will be the procedure at future meetings.

Shirley Thompson Khalouf, M.D., president, Indiana State Medical Association, gave her report on the legislation session. She outlined some of the successes and some of the defeats. The trustees, county presidents and county delegates have been provided with legislative updates periodically during the year. At my local hosptial, these have been posted when they arrived. Dr. Khalouf urges each physician to pay attention to mail from the Indiana State Medical Association, to respond when asked to contact legislators, and to get to know the legislative representatives. She encourages participation and support of IMPAC and AMPAC.

A report from George Rawls, M.D., treasurer of the Indiana State Medical Association, was given. He indicated that presently the Indiana State Medical Association is operating within its budget but indicated it may be necessary to have dues increased. It is the feeling that the reserves of the society must be increased and that we need to be more solvent. Also, the Indiana State Medical Association is still within its same building and has elected to remodel, update the building, and utilize the present assets in this property.

John MacDougall, M.D., presidentelect of the Indiana State Medical Association, addressed the members and made a plea for support of Dr. Peter Petrich, of Attica, for vicespeaker of the AMA House of Delegates. Richard King, executive director of the Indiana State Medical Association, spoke on issues before Congress and legislation concerning DRGs, drug dispensing, triplicate prescription bills, and other issues. Other dignitaries including Michael Mellinger, M.D., chairman of the Board of Trustees, Fred Dahling, M.D., speaker of the House, Paul Siebenmorgen, M.D., past president, William Beeson, M.D., Executive Committee, and William VanNess, II, M.D., Executive Committee, all made brief comments.

This meeting was terminated about 6 p.m. Hors d'oeuvres and refreshments were provided until dinner. Hors d'oeuvres and refreshments were jointly sponsored by Physicians Insurance Company of Indiana, American Physicians Life and Williams/Townsend Insurance Agency. Dinner was attended by approximately 60 people. The speaker, Dr. Charles Greenwood, assistant dean, School of Continuing Education, Ball State University, spoke and outlined activities concerning medical support to the Pan Am Games. The evening was a success.

The members of the Sixth District and I continue to commend the activities of Bob Sullivan as field representative to the district. His presence continues to be felt in reference to the activities and business of the Indiana State Medical Association. I continue to support Bob in his efforts and recommend that ISMA encourage field representatives to continue their activities. I shall continue to welcome ideas and suggestions from my district members and hope to be able to convey their wishes as trustee of the Sixth District. Also, I wish to commend Ray Haas, M.D., for his attendance at the Board of Trustees meetings, especially on those dates when I have been unable to attend.

Seventh District Trustees WILLIAM H. BEESON, M.D. DONNA MEADE, M.D.

1987 has been an extremely active year for ISMA as government intervention into the practice of medicine continues to escalate. Continued physician fee regulation pertaining to Medicare and Medicaid provider services, increased activity of peer review organizations to include quality of care judgments, legislative attempts to prohibit physician dispensing of pharmaceutical substances and the continued rise in medical malpractice premiums have been of paramount concern to ISMA and have occupied a prominent position on meeting agendas.

In response to these crucial issues threatening the viability of medical practice, the ISMA has taken an active stance. ISMA's Department of Government Relations and Commission on Legislation have been actively involved in coordinating efforts with the AMA to relay our concerns to our elected state and national officials. Your president has re-established the task force which so effectively dealt with the malpractice issue facing our profession several years ago. Presently, additional committees have been organized to help us prepare for the legislative challenges which we are sure to face in the very near future.

During 1987, the Future Planning Committee presented its summary report on how we might reorganize to more effectively and efficiently respond to the needs and desires of our membership during the coming decade. Your Board of Trustees has closely reviewed these recommendations and has and will continue to direct the implementation of many of those important recommendations.

In further response to the changing complexion of medical practice and medical practitioners, 1987 has seen the activation of the Hospital Staff Section to deal with problems pertaining to hospital-based physicians, and the establishment of an ad hoc committee to explore the needs of our everincreasing number of young physicians.

ISMA has been successful in significantly increasing the number of services available to our membership. These services now include not only group insurance purchases at extreme-

ly favorable rates, but also expanded group purchasing activities which have greatly expanded the buying power of our individual members. It is anticipated that these membership services will expand into business consulting activities in the coming year.

1987 has been an active and challenging year for ISMA and your trustees. While 1988 appears to hold even more significant challenges for our profession and organization, we are optimistic that the groundwork which has been established this year will allow us to deal even more effectively with these crucial issues in 1988.

As trustees, our mission is to effectively represent you and to promote the ideals and ethics of organized medicine on a statewide level. We solicit your advice, recommendations, and assistance in this effort.

It has been a pleasure to serve as your district trustees during the past year, and we appreciate the opportunity to again serve you in this capacity during the coming year.

Eighth District Trustee WILLIAM C. VAN NESS, II, M.D.

For the second straight year, your trustee has met with the county presidents and secretaries every three months at quarterly meetings. These meetings helped to improve communication within the district and helped prepare for our Eighth District meeting.

On June 3, 1987, the Eighth District met at Portland Country Club in Portland, Indiana. During the business meeting, William C. Van Ness, II, M.D., was reelected as trustee for a second three-year term. This was followed by several excellent updates by ISMA officers. A panel discussion was then held and county presidents spoke about the problems and concerns in their individual areas. This resulted in lively exchanges on a number of different topics including Peerview, third-party

payors, triplicate prescriptions, DRGs for MDs and MAAC charges. The evening ended with a stimulating presentation by attorney Jeff Segar and discussion about "Medical Liability and the Patient's Compensation Fund: Past, Present and Future."

For the upcoming year, the quarterly meetings will continue and hopefully will include local hospital staff presidents. Your trustee will also continue to attend one of two county meetings each year. If problems develop or questions occur, don't hesitate to check with me

Ninth District Trustee MAX N. HOFFMAN, M.D.

The events of this past year have again served to demonstrate well that several groups are attempting to regulate physicians and standardize the care we provide our patients. "MAAC" now is upon us as are generic screens and peer review for quality care. Claims of malpractice continue to increase and we are besieged to order fewer x-ray and lab studies to help keep the cost of medical care to a minimum.

As we seek a solution to our many problems, the most positive move we can make is to continue our financial support of IMPAC and AMPAC, and to voice our opinions to our state and national legislators. The remaining free enterprise we have in medicine can only be preserved at the legislative level. I urge each of you to actively participate locally by telling our side of the story and electing candidates who will support us in Indianapolis and Washington on future vital issues which will impact upon medicine.

Our annual Ninth District meeting was hosted by Tippecanoe County and held at the Lafayette Elks Club. The topic of our afternoon program was "Utilization, Quality and Sanctions in Peer Review" and was monitored by Dr. Ken Ahler of Jasper County. Dr. Wilbert McIntosh from Vigo County,

a CIMRO representative, discussed the guidelines and review procedures under which Peerview operates. The vital importance of chart documentation as well as an adequate discharge summary by the attending physician was stressed in his presentation. Dr. Ahler, in his remarks relating to the sanction committee, stressed the need for each physician, once a letter/notice of possible sanction is received, to follow through promptly with the steps in the denial/sanction flow chart. When this is done and additional information clarifies the case in question, very seldom (except in gross and flagrant violations) are sanctions necessary.

I wish to thank all commission members who have served well and have provided leadership for our district on behalf of all of us in medicine this year. Again I solicit input from each of you in the Ninth District as I represent you on the Board of Trustees.

Tenth District Trustee NICHOLAS L. POLITE, M.D.

One of the major activities in the Tenth District has been our concern over the discriminatory medical liability insurance rates for Lake County. We have communicated with the Indiana Insurance Commissioner's office and with ISMA. We have met with the lt. governor to express our views. We have informed and worked with our legislators. We have obtained medical coverage and plan to continue our efforts in this regard.

We have also made plans for our annual meeting. Last year's meeting in Valparaiso had a good turnout. The keynote speaker, James Todd, M.D., senior deputy executive vice-president of the AMA, was well received and brought a refreshing view of events affecting medical care. I trust that our keynote speaker for 1987 will be equally interesting.

Elections of Tenth District officers

will also be held at our annual meeting.

In November 1987, the Tenth District is planning, in joint sponsorship, to participate in a Medical Ethics Seminar. This review of current issues in medicine promises to be of interest to all. Several prominent ethicists will make presentations.

The Tenth District has kept in communication with its members during the year and announced its support of C.D. Egnatz, M.D., as a candidate for speaker of the ISMA House of Delegates.

Both the trustee and alternate trustee have been active in Tenth District affairs and ISMA responsibilities and look forward to continuing those efforts.

In keeping with recent ISMA resolutions and recommendations, officers of the Tenth District and of the component societies will plan a joint meeting in 1987-88.

One of my major concerns for the Tenth District is the disappointingly low turnout of our members. Our attendance is often barely over 100 out of a total membership of 750. I am aware that this trend is not generally different from that of most other districts, but it is a matter of concern. I do not know whether it is because of physicians' lack of time, too many meetings to attend, exhaustion, indifference, or what. However, a prime consideration, I hope, for our joint Tenth District meeting will be to pinpoint reasons and possible solutions.

I also plan to encourage greater cooperation among the component county societies of the Tenth District and among the districts in the northern part of the state. We need to continue our efforts to address the issues in medicine.

Eleventh District Trustee JACK HIGGINS, M.D.

The 11th District annual meeting was held September 17, 1986, at the Meshingomesia Country Club in Grant

County. The featured speaker was the president of the American Medical Association, John J. Coury, M.D.

The meeting was reasonably well attended by district members, but I would strongly urge all members of the district to attend annual meetings. Your district and state officers of ISMA need and welcome your input and participation.

Dr. Edward Langston was re-elected 11th District trustee, Dr. Jack Higgins was re-elected alternate trustee, and Dr. Michael Liebner was elected 11th District president. The annual meeting of the ISMA was held in November, 1986, in Indianapolis, and Dr. Langston was elected an alternate delegate to the American Medical Association. In accordance with the ISMA Bylaws, which prohibit officers from holding two major offices, Dr. Langston resigned his position as 11th District trustee. Effective January 1, 1987, Dr. Jack Higgins assumed the office of 11th District trustee. Also, according to the Bylaws, the District president assumed the office of alternate trustee until the next annual meeting of the district.

Your district trustees, Dr. Langston and myself, have faithfully attended all ISMA Board meetings this past year and have made every effort to see that our members are represented at the Board level. The Board works diligently to manage the affairs of ISMA.

In January, the Board approved the report of the Future Planning Committee, which had taken several months to develop. I feel this document is an excellent strategic plan for ISMA, and the Future Planning Committee should be commended for its efforts. The plan is a rather lengthy document and cannot be presented in detail in this report, but basically it sets the following priorities for ISMA over the next 3-5 years:

- I. Improve the Role of ISMA in Organized Medicine
- II. Become More Active in Public
 Affairs
- III. Strengthen ISMA's Role as Physician Representatives

- IV. Provide More Specific Services to Individual Physicians
- V. Maintain Involvement in Continuing Medical Education

I will gladly provide any member with a copy of the complete report. A specific recommendation of the Future Planning Committee is to have quarterly meetings of the district and county medical society officers, which we will be organizing in the near future.

Thirteenth District Trustee STEVEN M. YODER, M.D.

The 13th District annual meeting was held at the Elcona Country Club in Elkhart, Indiana, on September 10, 1986. ISMA officers were well represented and spoke directly to the problems concerning physicians and our organization. I was elected to the position of 13th District trustee and Al Cox, M.D., from South Bend, was elected to finish my term as alternate trustee.

The topic I have been asked most about concerns the changes in Medicare payments and the way Medicare administers its program. I have found that only by keeping myself constantly informed am I able to keep up to date and answer questions in these areas. I feel that by serving as a resource person, I encourage membership in our organization as the local doctors can see a benefit from this information. I would like to commend the ISMA staff for its timely response in its communications to the members.

AMA Delegation MARVIN E. PRIDDY, M.D. FLOOR LEADER

Peer Review, AIDS, MAAC regulations, tobacco and the Health Policy Agenda for the American People are some of the issues which occupied delegates during the AMA Interim Meeting held in Las Vegas Dec. 7-10, 1986, and the AMA Annual Meeting in Chicago June 21-25, 1987. Highlights of both meetings follow, but first, a couple of personal notes.

Dr. Peter R. Petrich's campaign for vice speaker of the AMA House of Delegates in a close three-way race was unsuccessful. However, your delegation did an excellent job of presenting his qualifications to the House. Thanks to everyone who supported Dr. Petrich's candidacy.

The delegation also wishes to extend its thanks and appreciation to Malcolm O. Scamahorn, M.D., and Gilbert M. Wilhelmus, M.D. Both of them were recognized on the floor of the House of Delegates at the Interim Meeting with other retiring AMA delegates. Their dedication, knowledge, and leadership served Indiana physicians well over the years and will be missed.

Interim Meeting

During 1987, tort reform has remained a top AMA priority. The AMA also has launched an Adolescent Health Care Initiative to focus attention on the problems of young people—alcohol abuse, violent crime, teenage pregnancy, drug dependency, and eating disorders.

Another issue the AMA continues to fight in the Congress is the MD-DRG proposal, which has been described as "unrealistic, unreasonable, unwise and unhealthy for our senior citizens...."

The AMA perceives the proposal to be "one more step on the road to rationing of care for Medicare beneficiaries."

ISMA introduced three resolutions at the Interim Meeting, which were referred to the AMA Board of Trustees. One called for education of

medical students, residents and physicians in utilization and quality review matters. Another called upon the AMA to warn insurers and regulatory bodies about the potential harm to patients who use mail order prescription services. The third resolution asked the AMA to urge suppliers of vaccines to permit physicians to buy vaccines at the same (low) price as government units and clinics.

The AMA decided to seek immediate modification of the federal government's peer review organization program to assure that all appeal mechanisms available to the physician are exhausted before a Medicare beneficiary is sent a letter denying care.

Several actions were taken regarding smoking and smokeless tobacco, including one which requests physicians to include the use of tobacco products as a contributing factor on death certificates whenever warranted.

The House of Delegates also reaffirmed its existing policy which emphasizes patients' freedom of choice of physicians or of health care delivery systems.

The delegates also asked the AMA to pursue the feasibility of becoming the designated clearinghouse for the reporting and dissemination of data on physician discipline and malpractice judgments and awards, in partnership with the Federation of State Medical Boards.

Annual Meeting

The major issues considered by the House of Delegates were physician dispensing, tobacco, AIDS, establishment of a foreign medical graduate section, the Health Policy Agenda for the American People, PROs, MAAC regulations, and the Omnibus Budget Reconciliation Act of 1986.

Physician dispensing received much attention as the House sought to clarify the AMA's position. After considerable discussion, the House voted to adopt Indiana's amended resolution which states, "That the American Medical

Association supports the physician's right to dispense drugs and devices when it is in the best interest of the patient and consistent with AMA's ethical guidelines. (The amended portion is in italics.)

The House of Delegates took several actions to augment AMA's continuing program to oppose the use of tobacco products. Paul R. Honan, M.D., an ophthalmologist from Lebanon, Indiana, introduced a resolution, which was adopted, which recommends that the Federal Aviation Administration establish regulations to ban smoking on all commercial aircraft.

AIDs garnered much attention. The AMA supports education as the major weapon against the spread of HIV infection. Additionally, the AMA emphasizes that a judicious balance between the well-being of HIV positive patients and the protection of the public health should be maintained. In terms of testing, AMA supports voluntary testing for high risk groups with mandatory testing being limited to prison inmates, the military and donors of blood, organs and other biological products. Central to the discussion of this issue was Board of Trustees' Report YY, which made 17 specific recommendations.

The House did not approve the establishment of a new Section for Foreign Medical Graduates, which was recommended by the Board of Trustees. Calling it an emotional and difficult issue, the reference committee cited a number of reasons why the new section would result in unmet and unfilled expectations among many FMGs. The House concurred in the committee's belief that FMGs should be encouraged to become actively involved within their local and state societies.

The House adopted the great bulk of HPA recommendations as policy.

The difficulties physicians are having with PROs prompted the introduction of a large number of resolutions. One adopted by the House urges the AMA to seek to change the Medicare

law to eliminate the notice of Medicare denial of payment decisions based on adverse quality of care findings until all appeals have been exhausted. The Council on Medical Service submitted a comprehensive report on the AMA's activities regarding PRO problems. The report included a detailed description of the new procedure for PRO handling of sanction cases that assure greater due process protections for physicians. AMA's view is that PROs should assure quality control through non-punitive, educational approaches.

Concerning MAACs, the House called on the AMA to: continue to seek judicial, legislative and regulatory changes to eliminate the MAAC regulations for non-participating physicians; seek to assure, in the meantime, that all Medicare fiscal intermediaries send to non-participating physicians adequate information for calculating MAAC levels.

The Omnibus Reconciliation Act was addressed when the House passed a resolution calling on the AMA to seek to rescind recently enacted regulations and statutes which discriminate against health care providers.

In another matter, there will be no dues increase in 1988, but one will likely be required in 1989 to support continued AMA growth.

The AMA House of Delegates elected James E. Davis, M.D., North Carolina, as its president-elect; John Lee Clowe, M.D., New York, as its speaker of the House, and Daniel H. Johnson, M.D., Louisiana, as its vice-speaker.

These meetings provide a unique educational opportunity, and I would urge you to attend and participate if you can.

Finally, I want to thank the members of the delegation for their diligent work, cooperation, and active participation in all phases of these meetings.

Editor, Indiana Medicine FRANK RAMSEY, M.D. EDITOR

The finances are good. At the end of May, two-thirds of the way through the fiscal year, journal income was about \$12,000 ahead of expectations, according to the budget and expenses which were some \$7,000 below the budgeted amount.

Income from national advertising this year is about 25% above that for last fiscal year. Publication subsidies, journal subscriptions, and journal advertising announcements are all well ahead of budget.

The Advertising Bureau has a contract with a sales organization, which is separate from the drug advertisement salesmen, and which sells only non-pharmaceutical advertising. The new sales outfit has functioned for only 12 months at the time this is written and has already established space sales well above what was expected. Such sales will increase and the increase in drug advertisements is expected to persist and possibly improve.

Since the annual report of one year ago, Indiana Medicine has received contributions consisting of the Continuing Medical Education articles with their questionnaires for Category 1 credit, the reports of the Clinico-Pathological Conferences from the School of Medicine and a wealth of short clinical articles written by ISMA members from all parts of the state, and by intensive care staff members of the Methodist Hospital in Indianapolis. Practically all submissions have arrived in a high state of concise and expressive writing. Only a few articles are returned for rewriting and alteration.

An informal review of state medical journals in general reveals that INDIANA MEDICINE is one of only a few journals, including those of much larger states, which publish a significantly high number of clinical medical articles.

We have had a fair share of socio-

economic and philosophical presentations, as well as several examples of the interesting and humorous dissertations on what might be designated as the "lighter side of medicine."

INDIANA MEDICINE and the Resident Medical Society of ISMA have again conducted, this academic year, an essay contest open to clinical residents, members of the RMS. The winners will receive certificates and cash prizes during the Annual Convention.

Resident Medical Society MARK BRADLEY, M.D. PRESIDENT

The Resident Medical Society continued its strong growth during its fourth year, with a total of 246 members at the end of last year. Membership is over 250 as of July 15, 1987. This resulted in an increase to six in our voting delegates at the AMA Resident Physician Section. The ISMA Board of Trustees incentive formula, based on membership figures, has enabled RMS to send all six delegates and at least one alternate to the Annual and Interim AMA-RPS Meetings. This steady support has enabled the ISMA leaders of tomorrow to establish a network of political contacts around the country that will be of direct benefit to Indiana in years to come.

The RMS has had a very productive program in the last year. The Practice Opportunity Session during the 1986 ISMA Annual Convention drew an attendance of 156. Our annual "Welcome to the Practice of Medicine in Indiana" program of interns starting residency in the state this summer, which concluded our 1986-1987 programs, drew 136 prospective members and guests.

The RMS continues to work on increasing resident membership, expanding services available to residents throughout the state, and to make the residency experience and transition into medical practice a positive, rewarding experience.

Personally, it has been a most valuable and rewarding experience to serve the Resident Medical Society, Indiana's resident physicians and organized medicine this past year. We will miss Carol Ann Cunningham at the ISMA, for her efforts and dedication insured successful coordination of our membership programs in the past years. We wish her the best of luck in her endeavors in Washington, D.C.

Indiana Medical Foundation FRANK RAMSEY, M.D.

The Foundation was created by the Indiana State Medical Association in 1968 as an endowment fund for the educational and medical research purposes of the Association. These purposes included specifically financial support for Association publications and for public education in medical treatment, preventive medicine and hygiene.

The Foundation was originally classified by the Internal Revenue Service as a private foundation. In 1973, in response to a petition to change classification, the Foundation was reclassified as not a private foundation and would function under Section 509(a)(2) of the Internal Revenue Code.

The advantage of the reclassification is that private foundations are obliged to spend the entire interest income each year. A foundation which is classified as not a private foundation may spend any, all or none of interest income and therefore, may increase its assets. Financially, the IMF has grown steadily and slowly. Assets total \$31,133.13. Receipts in the form of contributions and interest add up to \$1,283.11 for the first six months of 1987.

The Board of Directors of the Foundation consists essentially of the ISMA Executive Committee plus the ISMA executive director and the editor of INDIANA MEDICINE.

One consideration in determining

whether a foundation is private or public is the number of contributors outside the members of the Board of Directors.

As a matter of housekeeping and in line with the goal of increasing assets of the Foundation, contributions, bequests in wills and the establishment of memorials for relatives and friends in lieu of flowers are all methods to be encouraged to prosper the Foundation and to expand the body of contributors to a larger and larger public universe.

Commission on Constitution & Bylaws

HELEN BEYER CZENKUSCII, M.D. CHAIRMAN

In the last year, the Commission on Constitution and Bylaws implemented into the Constitution and Bylaws the several resolutions submitted to it.

- 1. To implement Resolution 86-1, we made the appropriate changes in Section 3.020701.
- 2. To implement Resolution 86-3, we added Section 15.02, added a second paragraph to Section 7.1008, and notified the Commission on Convention Arrangements by memorandum of these changes.
- 3. To implement Resolution 86-4, the Commission made the deletions which eliminate the necessity of certain notifications having to be published in INDIANA MEDICINE.
- 4. To implement Resolution 86-8, we added amendments to Sections 1.01 and 1.0107. This was implemented verbatim in accordance with the resolve.
- 5. To implement Resolution 86-25, we added an amendment to Section 3.021102.

Further actions by the Commission were:

1. In reference to 86-44, which was sent to the Commission by the Executive Committee for clarification, the Commission approved the draft of Resolution 87-2, which was sent to the Board of Trustees to submit to the House.

2. Recommended that a resolution be drafted by the Commission to eliminate the College Health Physicians, as there have been no elections or meetings for a number of years.

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3. Recommended to the Medico-Legal Committee that it might be appropriate to change the name to Medical-Legal Committee and that the Committee submit a resolution to amend the Bylaws.

Your Commission chairman thanks the ISMA staff and members of the Commission for their necessary assistance in this, my first year.

Commission on Legislation EDWARD L. LANGSTON, M.D. CHAIRMAN

1987 has been a particularly busy year!

The Commission on Legislation met twice prior to the long session of the Indiana State Legislature, which began in early January and ended in April. The commission wants to highlight and thank the Department of Government Relations of ISMA for its outstanding work this past year. In particular, Julie Newland, director, needs to be recognized. She has done an outstanding job of helping to crystallize the issues that face the Commission on Legislation. She has also, on numerous occasions, presented the commission's actions to other commissions and committees the organization, and within represented ISMA at many outside forums. I continually receive positive comments with regard to her presentation, its clarity, and its impact upon the parties to which it is presented. Dan Boots, legislative assistant, did an outstanding job this past year. Dan has since left ISMA, and we wish to thank him for his efforts. Cindy Lyons, the legislative intern, and Beckett Shady-King, administrative assistant, worked with Mrs. Newland, and their efforts were not only appreciated but were beneficial to the organization.

The commission and Government Relations staff continue to interact with the legislators on a year-round basis. It has been our experience in the past that this facilitates communication during the legislative sessions. It is our desire that all physicians maintain contact with their legislators on a year-round basis.

In addition, the Government Relations Department has been monitoring proposed state regulations that affect health care delivery and working with several different state agencies on these issues. "Grass roots" lobbying with our federal government also has been increased. Most notably, the Department of Government Relations has been keeping the membership apprised of federal health issues and has made good use of the "Key Contact" program with Indiana's congressmen and senators.

The Indiana Academy of Family Physicians and ISMA co-sponsored the "Physician of the Day" program at the Indiana General Assembly. Many physicians volunteered a day of their time at the State House and had a chance to be introduced to the lawmakers and see the legislative process first-hand.

A very successful legislative reception was held this year co-sponsored by IMPAC and the commission. Quite a large number of legislators were there to share their thoughts with ISMA members and their spouses. This is a beneficial forum that allows our members to meet their legislators and discuss issues of concern. The large turnout of physicians, spouses, and legislators made the evening quite enjoyable and successful.

You have received a "Digest of Health and Medical Laws" from the 1987 Indiana General Assembly as prepared by the Government Relations Department. I will only highlight a few of those that made it through the legislative process.

SEA 407 expands the law requiring the testing of newborns for in-born errors of metabolism. This requires that the State Board of Health adopt rules and develop a system to insure centralized and coordinated tracking and follow-up. The State Board can also set the fee from designated laboratories.

HEA 1010 allows the State Board of Health to adopt rules to define and classify communicable diseases. It gives the local health officer or the secretary of the State Board of Health the authority to ask an individual for written informed consent to be examined to prevent transmission of communicable diseases, and establishes proceedings to be taken if an individual refuses to be examined and is a threat to the community's health.

HEA 1024 makes it a felony to tamper with a consumer product or its label.

SEA 359 requires physicians who diagnose a pregnancy to administer a blood test during the third trimester of the pregnancy for the standard serological test for syphilis. It also removes the prohibition of issuance of license to a person who is afflicted with venereal disease. It also removes the requirement for a premarital test to diagnose syphilis.

HEA 1551 makes it a Class B misdemeanor for a practitioner to repackage and sell a drug sample.

HEA 1697 updates the controlled substances statute. The Controlled Substance Advisory Committee was redefined, and was given the authority to establish a centralized computer data base for monitoring excessive prescribing and dispensing of prescription drugs if so recommended by the Prescription Abuse Study Committee. This committee is to study the prescription drug abuse problems in Indiana, to make recommendations to the legislature before November 1 of 1987 and 1988, and to make recommendations to the Advisory Committee for any administrative solutions before December 31, 1988.

SEA 394 allows a physician to be appointed to the governing board of a county hospital.

SEA 262 requires a dentist to have

a permit to administer general anesthesia, deep sedation, or light parenteral sedation to a patient.

SEA 516 changes the expiration date of physicians' licenses, and also gives the Medical Licensing Board a broader range of powers with regard to issuance of licenses.

HEA 1702 provides that a peer review committee and/or organizations engaged in good faith peer review activities are immune from civil action.

HEA 1767 establishes a Managed Care Provider Program under Medicaid.

HEA 1007 establishes the Clean Indoor Air Law for public buildings, which restricts smoking only to designated areas.

HEA 1533 increases the taxes on cigarettes, cigarette papers and wrappers and designates this money to the Local Health Maintenance Fund in the amount \$2.46 million.

SEA 145 increases the minimum age for the sale of tobacco to minors from 16 to 18 years.

Governor Orr vetoed Senate Bill 375, which was known as the Pre-judgment Interest Bill.

The Government Relations Department and the Commission on Legislation maintained a very high profile throughout the legislative session. Once again, background information and efforts are being planned for the upcoming session. The commission looks forward to an exciting and eventful experience. We would anticipate bills being submitted which would impact upon physician dispensing of medication, those that would enlarge paramedical practice of medicine, and other attempts to change the Medical Malpractice Law passed first in 1975.

The Commission on Legislation recommends that a permanent site be designated for legislative information purposes at every ISMA annual meeting. The booth could be staffed by members of the commission as well as members of the Government Relations Department to answer questions and field suggestions by membership.

Once again, it has been a rewarding and interesting year. I appreciate the assistance and insight from the commission members. On behalf of the members of the Commission on Legislation, I want to thank the ISMA for the opportunity to serve. It has been a pleasure!

Commission on Medical Education FRANKLIN A. BRYAN, M.D. CHAIRMAN

The Commission on Medical Education and its Subcommission on Accreditation met on November 16, 1986 and April 5, 1987. A third meeting was held on August 30, 1987. Shokri Radpour, M.D., again was appointed vice-chairman of the Commission while Eugene Gillum, M.D., served as chairman and Kelly Chambers, M.D., served as vice-president of the Subcommission on Accreditation.

The major activity of the Commission and Subcommission has again been that of accreditation/reaccreditation of institutions and organizations for providing intrastate continuing medical education programs. During the year there were two institutions and eight organizations reaccredited while two institutions were granted initial accreditation. Two organizations had accreditation action deferred, one institution and one organization withdrew as accredited providers, and one institution was placed on probation. In total, there were 17 accreditation/reaccreditation actions thus far this year.

The ISMA received continued recognition of its intrastate accreditation program for six years without restrictions. This followed the site visit by the Accreditation Council on Continuing Medical Education on March 23, 1986 and review by the Committee on Review and Recognition of the ACCME in October 1986. The letter of notification was high in its praise of our program in Indiana.

Doctors Bryan and Gillum and Beckett Shady-King attended the ACCME/State Medical Society Invitational Conference on CME held in Chicago on October 9, and the AMA CME Conference on October 10 and 11. Ms. Shady-King participated in a panel discussion on "Accreditation of Limited (small) Sponsors or Providers." The panel discussion was excellent and well received by the attendees. The question-and-answer period following the panel discussion had to be brought to a close, due to the level of interest generated by the panel, and to stay within the time frame of the conference.

The Commission accepted a recommendation from the Subcommission for more specific guidelines for handling expired accreditations.

Many other activities were considered, including planning for an ISMA CME Workshop to be held in the spring of 1988; scientific exhibits plus other educational exhibits at the Annual Meeting; new site surveyor recruitment and training; Subcommission enlargement by adding representatives of two additional specialty areas; ACCME accepted recommendations made by the ISMA Commission on Medical Education regarding institutions and organizations accredited as intrastate CME providers advertising nationally; and concerns of the Subcommission and Commission related to the recommendations of the ISMA Future Planning Committee regarding education.

Eugene Gillum, M.D., after serving 17 years as chairman of the Subcommission on Accreditation, resigned following the April meeting. Stephen Jay, M.D., was appointed as his successor.

The chairman wishes to thank the officers and members of the Commission and Subcommission and the site surveyors for their hard work and continued efforts in carrying out their responsibilities leading to the success of this important program in the ISMA. He especially recognizes the invaluable

contributions in time, effort and skill given by Dr. Gillum who has served as the Subcommission's only chairman since its formation.

Finally, Julie Newland and Beckett Shady-King of the ISMA staff deserve recognition since their activities have guaranteed success in this most important responsibility of ISMA to its membership. Because of this success, Ms. Shady-King, Dr. Gillum, your chairman, and the ISMA have gained attention and recognition by the national accrediting body, the ACCME, and its components, especially the AMA, making the Indiana CME activities a model for the rest of the country.

Commission on Physician Impairment

FRED M. BLIX, M.D. CHAIRMAN

I am pleased to report that the Commission on Physician Impairment continues to be both active and enthusiastic. The Commission is composed of a dedicated group of physicians who freely give of their expertise and experience.

The primary thrust of this Commission continues to be the creation and training of local impaired physician committees. While the Commission remains prepared to respond to individual problems, we believe that our most important role is to convince local hospitals as well as county medical societies to create their own impaired physician committees. To better accomplish that goal, the Commission has developed a brief seminar, designed to be conducted in the local community, that will enable local committees to identify impairment and to take definitive steps in getting impaired physicians on the road to recovery. If your county society has not yet organized an impaired physician committee, I urge you to contact the ISMA headquarters for assistance in that process.

Commission on Medical Services

ALFRED C. COX, M.D. CHAIRMAN

The ISMA Commission on Medical Services involves actions mandated by the ISMA House of Delegates as well as interim issues referred by the ISMA Board of Trustees.

During the past year, the Commission approved and mailed a new ISMA brochure entitled "Your Financial Advantage." In the brochure, ISMA members will find a variety of special financial arrangements negotiated exclusively for Indiana's physicians. Also in the brochure you will find a variety of programs, including discount airline tickets, discounts on new cars, free membership at the Wholesale Club, and many more.

In response to Resolution 86-2, the Commission recommended to the Board of Trustees that ISMA form support groups throughout the state to assist physicians undergoing the personal trauma associated with being sued for malpractice.

In response to Resolution 86-39, the Commission recommended to the Board of Trustees that ISMA correspond with vaccine manufacturers as well as the State Board of Health protesting the current two-tiered pricing system for vaccines.

In response to Resolution 86-46, the Commission recommended to the Board of Trustees that ISMA more closely monitor the activities of Peerview through our existing committee structure.

In response to Resolution 86-47, the Commission recommended to the Board of Trustees that ISMA take whatever action necessary to assure that post-operative care is provided in an ethical fashion and that post-operative care is provided by an appropriately licensed practitioner.

After hearing the Commission recommendation regarding Resolution 86-13a, the ISMA Board of Trustees

went on record as opposing schoolbased health clinics.

In addition to dealing with resolutions from the 1986 House of Delegates. the Commission also listened to a fascinating report by the Grant County Medical Society regarding their PA-TIENT ADVOCACY COMMITTEE. By specifically working with individual Medicare patients, the Committee has been successful in assisting Medicare patients receive the appropriate payment from Medicare, and it has generated a great deal of positive local publicity. The Commission was so impressed that a recommendation was made to the Board of Trustees to host a statewide seminar so that other counties may benefit from the Grant County experience.

The Commission also has reviewed a number of business proposals regarding new activities for ISMA and new endorsements.

At present, the Commission is soliciting additional information from the Indiana Department of Education regarding a proposal to do preschool age health screening at selected locations throughout the state. After more information is collected, a recommendation will be made to the Board of Trustees.

In conjunction with the ISMA Strategic Plan, the Commission has recommended to the Board that a midyear leadership conference be held six months after the ISMA annual meeting. The program for this conference is still under development; however, ISMA members will receive more information by direct mail.

I would like to thank the members of the Commission for their dedication and generous devotion of time to this Commission.

Commission on Public Relations R. ADRIAN LANNING, M.D. CHAIRMAN

In keeping with ISMA's goal of

educating the public about health issues and of emphasizing that physicians are advocates of the best possible health care for their patients, ISMA has been taking a more active role in public health issues.

Tobacco-Free Society Campaign

One of the public health and patient advocacy issues the House of Delegates targeted for a legislative and public awareness campaign during 1986-87 is the Tobacco-Free Society initiative. The purpose of this campaign is not only to educate the public about this health hazard and to change tobacco laws, but to place ISMA and its members in a positive public affairs position. In other words, the Tobacco-Free Society Campaign provides physicians with an opportunity to receive favorable media and public attention.

With the help of many physicians around the state, the campaign has been a resounding success. ISMA organized the Indiana Coalition for a Tobacco Free Society. Twenty health care associations and several individuals joined the coalition. Four tobacco-related bills were introduced in the Indiana General Assembly at the urging of ISMA and the coalition. Of the four, three were passed into law including: a bill to increase the sales tax on all tobacco products; a bill to increase the age for tobacco sales to minors from 16 to 18, and a bill to require designated smoking and nonsmoking areas in state and local government buildings.

Similar bills have been introduced into the legislature for many years, and each time they failed. And while we know that public attitudes on the hazards of tobacco use have changed greatly, the success of this legislation this year is due in no small part to the many ISMA members who testified in the General Assembly or wrote or called their legislators.

A second part of the Tobacco-Free Society effort was public education. Since youngsters begin experimenting with cigarettes and tobacco as soon as the third and fourth grades, ISMA implemented a "School Docs" project. Fifty-one physicians participated by making school visits. The response from schools and physicians has been very positive, and ISMA received several requests from teachers wanting to continue the project this fall.

'Healthy, Happy & Wise'

ISMA's six-part video series for older adults, "Healthy, Happy & Wise," continues to be used throughout the state. It was rebroadcast on PBS stations earlier this year. Comcast Cablevision in Indianapolis broadcast the programs last May and June. In a special promotion to draw attention to Older American's Month in May, 15 Marsh Supermarkets in the Indianapolis metropolitan area loaned the series for free from their video departments. In the remainder of the state, the shows are still being shown in nursing and retirement homes.

'Wheel of Safety'

Hoosiers for Safety Belts asked ISMA to participate in a Seat Belt Enactment Festival July 1, the date the seat belt law became effective. The public relations staff developed a "Wheel of Safety" exhibit to display at the health fair. The "Wheel of Safety" is a portable table top game similar to the "Wheel of Fortune" television game show. It is available to county medical societies for use in local health fairs

Expert Opinion

In July, ISMA participated in WTHR Channel 13's "Expert Opinion" program. Six ISMA members from around the state agreed to take calls from viewers during a three-hour callin segment. The station promoted this opportunity for viewers to ask doctors questions during its 5 p.m. newscast and conducted a brief interview of some of the participants during the 5 p.m. and 11 p.m. newscasts.

Continuing Programs

ISMA's radio actualities (taped inter-

views) and health tips, the "Hoosier Doctors Says" newspaper columns, spokesperson training seminars and ISMA REPORTS continue. During the year, the focus of ISMA REPORTS has turned more to socio-economic issues and explanations of the changes taking place in medical regulations. A new design for the publication, which will improve readability, will be unveiled in October.

New Directions

The public relations staff is in the process of developing plans for internal public relations projects to help serve the needs of county medical societies. Our goal is to provide physician members with tangible public relations materials and services. During the upcoming year, ISMA will be seeking your input for these programs through a membership survey. We seek your suggestions and directions. We want to know what you think we're doing that's good, and what we aren't doing that we should. We are searching for new ways for you to benefit from your ISMA membership. I hope you will help us by responding to the questionnaire when you receive it.

I would like to thank the members of the Commission on Public Relations and the Public Relations staff for their continued hard work on behalf of the Indiana State Medical Association.

Commission on Sports Medicine

RONALD G. BLANKENBAKER, M.D. CHAIRMAN

Over the past several years, the Commission on Sports Medicine has encouraged good health and physical fitness in our Hoosier youth through safe, effective sports activities in school and amateur athletic programs. Since the last annual report, the Commission has met bimonthly.

I am pleased to report that ISMA members throughout the state have

responded to our sports medicine questionnaire. As a result, ISMA has identified valuable resources for the Pan Am Games, the International Special Olympics and other future events. In addition, a number of members have agreed to participate in an in-house speakers bureau. The Commission appreciates your willingness to share your expertise. If you have not completed a questionnaire and wish to be involved in future activities, please let us know and we will send you one.

Throughout the year, the Commission has met with representatives of the Indiana Athletic Trainers Association in an attempt to develop programs which will support efforts to prevent and treat athletic injuries in our schools. Additionally, the Commission has recommended to the ISMA Board of Trustees that legislative initiatives be taken to support these endeavors. The ultimate goal of these activities is to assure that every school has a qualified team physician with the support of an athletic trainer or similarly qualified individual.

The Commission has closely followed and cooperated with the preparations for the Pan Am Games in Indianapolis as well as the International Special Olympics held in South Bend. Additionally, the Commission continues to act as a liaison with the Governor's Council on Physical Fitness and Sports Medicine, and with the Council has cosponsored a Sport and Fitness Resource Directory for Indiana.

In cooperation with other athletic interests throughout the state, the Commission has continued to develop position statements on issues of importance of safety in amateur athletics. The Commission has recommended and the Board has approved that ISMA should encourage the Indiana General Assembly to ban the use of anabolic steroids in athletes. With the support of the 1986 House of Delegates we have pursued the use of appropriate headgear during equestrian events. Most recently, the Commission recommended to the Board that ISMA

members and high school coaches throughout the state be advised of the questionable value of single upright braces. The Commission also reaffirmed its stance on heat-related illnesses by advising IHSAA that a proposal to start the football season earlier in the year could have negative health consequences for high school athletes.

Through the Commission, a sports medicine seminar was held in Lake County for high school athletes, coaches and school officials, trainers and physicians. Instruction was given on the means to provide a safe environment for competitive sports. This was a very successful meeting and more seminars are on the drawing board throughout the state.

I would like to personally thank the members of the Commission and its technical advisory committee for their dedicated efforts.

Future Planning Committee WILLIAM C. VAN NESS, II, M.D. CHAIRMAN

The Future Planning Committee has now completed an analysis of the medical environment within the state of Indiana as well as a strategic plan that will be used as an outline in guiding ISMA's activities for the next several years. Nearly a year in the making, ISMA's Strategic Plan is the result of numerous meetings throughout the state with a cross-section of ISMA members, a significant amount of independent data collection and a great many thoughtful meetings with both the members of the Future Planning Committee and the officers of ISMA.

While a complete copy of the Strategic Plan is available to any member through the ISMA head-quarters, the following information is a brief summary of the Strategic Plan. Priority 1: Improve Role of ISMA in Organized Medicine

The organized medical community in Indiana is made up of 81 county medical

societies and numerous state and local specialty societies. ISMA is the only organization that offers a generic approach to the issues of concern to all Indiana physicians. ISMA needs to exercise its leadership position by improving communication about physician leaders in coordination of medical society activities.

To accomplish this activity, the Strategic Plan calls for ISMA to:

a) Facilitate meetings among physician leaders within their districts;

b) Institute an annual midyear conference for the leadership of the medical community throughout the state:

- c) Provide support services to both state and local specialty societies; and,
- d) Restructure communications to ISMA members.

Priority 2: Become More Active in Public Affairs

In an increasingly complex media environment with an increasingly sophisticated public, ISMA needs to take full advantage of all opportunities that are presented to it in public affairs. The Strategic Plan outlines four basic activities to carry out this priority:

- Actively pursue joint efforts to resolve specific issues. Specifically, the plan calls for an increasing utilization of coalitions, created to deal with specific issues;
- b) Develop programs to educate key health care decision makers;
- c) Become an ombudsman for the public on statewide health care issues. Even though ISMA has long been active in public health issues, it should become an even more explicit advocate for the public interest;
- d) Exert leadership when addressing the issue of health care to the underserved.

Priority 3: Strengthen ISMA's Role as Physician Representative

a) Strengthen lobbying at the State Government level. Even

- though ISMA has been both active and successful at the Indiana General Assembly, the Strategic Plan calls for an increase in the state lobbying activities;
- b) Reorient Federal Government activities. The plan calls for ISMA devoting increased energy to meeting with Indiana congressmen when they return to their Districts; that way, physician constituents can meet one-on-one with their representatives in a more controlled atmosphere;
- c) Study the feasibility of ISMA becoming a negotiator for physician interests.

Priority 4: Provide More Specific Services to Individual Physicians

- a) Expand existing informal business services to members. The plan calls for ISMA to develop a variety of business related services that will give ISMA members a financial advantage;
- b) Create a formal practice consulting service for members.
 ISMA should be prepared to respond to the specific business needs of its members;
- c) Establish a physician placement service.

Priority 5: Maintain Involvement in Continuing Medical Education

The Strategic Plan provides for ISMA continuing in its efforts to assure that quality medical education is available to Indiana physicians.

As a final task, the Future Planning Committee developed a timetable for implementing the Strategic Plan.

I would like to sincerely thank the members of the Committee as well as the officers of ISMA for their significant investment of the time necessary to complete the Strategic Plan. All committee members gave generously of both their time and their insights into the many issues facing the practice of medicine in today's environment.

Grievance Committee G. BEACH GATTMAN, M.D., CHAIRMAN

The Grievance Committee continued to work on complaints against physicians during 1987.

As usual, the lack of good patient communication was the reason for most of the complaints that were received. As chairman, I wish to thank the other members of the Committee for their willingness to serve during the year.

Medico-Legal Committee WILLIAM WRIGHT JR., M.D. CHAIRMAN

The Medico-Legal Committee had no specific business referred to it during 1987. Most of the concerns that the Medico-Legal Committee has addressed in previous years regarding the number of multiple defendant lawsuits being filed, and the impact of the \$15,000 threshold for filing suits directly in court, are being monitored by the ISMA Medical Malpractice Study Committee that was created by ISMA.

The Committee continues to be available for referral of medical-legal problems that are experienced by the members, and it encourages all physicians to keep the Committee aware of medical-legal interaction and problems as they occur.

Negotiations Committee JOHN A. KNOTE, M.D. CHAIRMAN

The Negotiations Committee did not meet in 1986-1987 as there were no requests for assistance in this area. On the basis of discussion with several officers and other members, future direction may well take the form of a clearinghouse for negotiations assistance to those groups or individuals in need of that service. The reorientation of our efforts would be well served by con-

tinued participation of those who have had previous negotiations seminar instruction at the AMA level and who retain an active interest in this area, in order to assist in those situations where negotiations are necessary in the future.

Reduce Drunk Driving Committee MICHAEL B. DuBOIS, M.D. CHAIRMAN

The Reduce Drunk Driving Committee did not meet in 1987. Many important issues in the areas of legislative and public awareness efforts involving drunk driving, especially by Indiana's youth, are still unresolved.

In accordance with the resolution adopted by the ISMA's House of Delegates at its annual meeting in 1985, this committee would like to see legislation enacted which would reduce the blood alcohol content for violations of Indiana's drunk driving law from the current .10% to .05%. In addition, it is hoped that through various public awareness and public relations efforts, the ISMA will be successful in its efforts to lessen the incidence of death and injury due to drinking and driving in Indiana.

Ad Hoc Advisory Committee for Medicaid and Indigent Care

PAUL WENZLER, M.D. CHAIRMAN

The Ad Hoc Advisory Committee for Medicaid and Indigent Care was created by President Khalouf to provide a formal mechanism for communicating concerns that physicians and their patients have with the Indiana Medicaid system. The committee is composed of representatives of several medical specialties.

One of the primary issues that the committee dealt with was the inception

of a "managed care" system of primary care physicians for services rendered to Medicaid patients. The Indiana Department of Public Welfare explained to this advisory committee how they envisioned the program would work. One central aspect was to establish a relationship of continuity between Medicaid patients and their physician. The committee then made several suggestions, (i.e., how immediate care is to be rendered, that the program be fee-for-service, and that the managed care physician also be reimbursed for "consultative" services.) The managed care physician plan was adopted by the 1987 Indiana General Assembly. The plan itself will take effect in 1988 upon approval by the federal Health and Human Services Department.

At this stage, the advisory committee will continue to work with the Indiana Department of Public Welfare on the creation of state rules which will govern many of the details of how this managed care program operates.

I wish to thank the committee members for their able assistance, and the Indiana Department of Public Welfare for seeking the input of ISMA into this important aspect of medical care rendered to Indiana's Medicaid population.

Ad Hoc Committee on Geriatrics B.L. MARTZ, M.D. CHAIRMAN

A discussion of a policy paper on nursing home care by physicians has resulted in the Ad Hoc Committee on Geriatrics introducing a resolution on the subject for consideration by the ISMA House of Delegates. During the committee's June 10, 1987 meeting, the concept of living wills was also discussed. However, the committee determined it would not be desirable to take any action.

At the committee's request, the ISMA Board approved a proposal to cooperate with the Indiana Federation

of Older Hoosiers in planning a Senior Camp this fall at Bradford Woods. The camp will bring together representatives of organizations who are vitally concerned with health and social issues pertinent to older people.

The Ad Hoc Committee on Geriatrics continues to cooperate with the ISMA Commission on Public Relations to develop new ways of promoting the "Healthy, Happy & Wise" video series for older adults. Last spring, the six-part series was broadcast on Comcast Cablevision in Indianapolis. Additionally, 15 Marsh Stores in the Indianapolis Metropolitan area are loaning the series free from the Marsh video centers.

As committee chairman, I attended an Aug. 3, 1987 United Senior Action public meeting concerning the report, "Changing Patterns of Hip Fracture Care Before and After Implementation of the Prospective Payment System," which appeared in the July 10, 1987 issue of JAMA.

I would like to thank the members of the Ad Hoc Geriatrics Committee and ISMA staff for their input and involvement.

Ad Hoc Advisory Committee on Medical Malpractice GEORGE T. LUKEMEYER, M.D. CHAIRMAN

Shirley Thompson Khalouf, M.D., recreated the Ad Hoc Advisory Committee on Medical Malpractice, brought back into existence in 1987 as a result of the regionalization of malpractice insurance rates and the financial drain of the Patient's Compensation Fund by numerous claims in 1986. The committee, composed of 11 physicians and several consultants, met twice in 1987 and discussed a variety of issues affecting the medical malpractice situation in Indiana.

The majority of the committee's discussion concerned repeat cases

against the Patient's Compensation Fund, which the plaintiff bar insists is the direct cause for losses against the fund. The committee studied figures provided by ISMA staff on the number of repeat claims against the fund since its inception and was able to substantiate this assumption.

The committee will hold another meeting yet this year to review the options available to further strengthen the financial stability of the Patient's Compensation Fund and to be prepared for possible legislative proposals affecting the Medical Malpractice Act during the 1988 General Assembly.

Physicians Insurance Company of Indiana PAUL SIEBENMORGEN, M.D., PRESIDENT AND CHAIRMAN OF THE BOARD

The success of Physicians Insurance Company of Indiana, coupled with its considerable fiscal and administrative strengths, became more clearly evident in 1986 with several recordsetting achievements.

The company now insures more than 1,800 physicians, which represents nearly one-third of the membership of the Indiana State Medical Association.

Premium income for medical professional liability reached the \$3.9 million level in 1986, which was a 100% increase over the previous year.

Another significant achievement occurred in multi-line production, including automobile, homeowners and business owners insurance, with an increase over 1985 of more than 200%.

PICI has continued its efforts to introduce new products and services to the marketplace. In early 1986, we began offering professional liability protection to dentists; by the end of 1986, more than 250 dentists had obtained their insurance protection from PICI.

The first quarter of the year also saw

the introduction of another important policyholder service, premium financing, offered through Medical Premium Finance Company which specializes in service to physicians, dentists and other select markets.

We believe that such financing can enable policyholders to maintain their insurance coverage without having to disrupt their cash flow or directing funds from other investments which are part of their total financial plan.

In the area of legal reform, Indiana physicians witnessed the passage of two measures in 1986 which impact the medical community. Senate Bill 393 allows courts to assess a defendant's attorney fees against the plaintiff who is judged to have brought a frivolous lawsuit. Senate Bill 394, also enacted during 1986, permits the reduction of awards in malpractice cases by any amounts paid from collateral sources. Both laws will further strengthen the superior tort reform package which has existed since 1975 in Indiana.

PICI continues to analyze the company's claim experience. From inception through the end of 1986, claims reported to the company totaled 252. Of that number, 190 cases remain open. Of the 62 cases closed, nearly 75% were settled with no indemnity payment against our insureds.

This successful ratio reflects PICI's strong commitment to the defense of claims brought against our policyholders.

During the first six months of 1987, the assets of your company have risen by more than \$2.5 million over the same period last year. Medical professional liability premiums are up more than 31% from June 30, 1986. Throughout the rest of 1987, Physicians Insurance Company of Indiana expects to acquire an even larger share of the market, a process which will be bolstered by the continuing endorsement of the Indiana State Medical Association.

In the coming months, we will be

CONTINUED ON PAGE 994

Status of 1986 Resolutions

The following summary includes referrals from th	e
Board to ISMA committees and commissions and is sub)-
mitted as a supplement to the annual report of th	e
Chairman, Board of Trustees:	

RESOLUTION 86-1	SUBMISSION OF RESOLUTIONS TO THE HOUSE OF DELEGATES
Introduced by:	Commission on Constitution and Bylaws
Referred to:	Commission on Constitution and Bylaws
Status:	Implemented, modified Section 3.020701 of ISMA Bylaws
RESOLUTION 86-2	FORMATION OF PHYSICIAN AND FAMILY SUPPORT GROUP
Introduced by:	Fort Wayne Medical Society Board of Trustees
Referred to: Status:	Commission on Medical Services Being implemented
Status.	being implemented
RESOLUTION 86-3	FIFTY YEAR CLUB
Introduced by:	ISMA Editorial Board of Indiana Medicine
Referred to:	Commission on Constitution and Bylaws
Status:	Impelemented, addition of Section 15.02, ISMA Bylaws
RESOLUTION 86-4	BYLAW CHANGES RELATING TO INDIANA MEDICINE
Introduced by:	ISMA Editorial Board of Indiana Medicine
Referred to:	Commission on Constitution and

RESOLUTION	86-5	PURCHASE	OF	IPRO	STOCK	BY
		ISMA				

Implemented

Bylaws

	TOTALL			
Introduced by:	ISMA	Board	of	Trustees
Referred to:	None			
2				

Referred to:	None
Status:	Not Adopted
DESCRIPTION OF S	MEDICALIER

RESULUTION 86-6	MEDICAL LEGAL COMPACT OF
	CONDUCT OF ISBA AND ISMA
Introduced by:	ISMA Board of Trustees and ISMA
	Medico-Legal Committee

Referred to:	ISMA Policy Manual
Status:	Implemented
RESOLUTION 86-7	QUALITY MEDICAL CARE
Introduced by:	Delaware-Blackford County Medical

RESOLUTION 86-7	QUALITY MEDICAL CARE
Introduced by:	Delaware-Blackford County Medical
	Society
Referred to:	ISMA Policy Manual
O	* 1

Status:	Implemented
RESOLUTION 86-8	MILITARY PHYSICIANS
Introduced by:	Board of Trustees

	E		CO	
Referred to:	Commission	on	Constitution	and
	Bylaws			

	Bylaws
Status:	Implemented through Section 1.0107
	of ISMA Bylaws

RESOLUTION	86-9	EDUCATION OF PHYSICIANS IN
		UTILIZATION AND QUALITY

REVIEW

S. Rahim Farid, M.D. and W. L. Introduced by: Strecker, M.D.

Referred to: American Medical Association

Status:	AMA House referred resolution to
	AMA Board of Trustees for develop-

ment; report pending.

RESOLUTION 86-10 RETURN INVESTIGATION OF MEDICAL COMPLAINTS TO THE

MEDICAL LICENSING BOARD OF INDIANA

Introduced by: Arthur G. Blazev, M.D. Referred to: None

Status: Not Adopted RESOLUTION 86-11 MULTIPLE DEFENDANT LITIGA-

TION Introduced by: John Beeler, M.D., Chairman, Medico-Legal Committee Referred to:

Medico-Legal Committee Status: Ad Hoc Malpractice Advisory Committee is reviewing.

RESOLUTION 86-12 MANDATED QUARTERLY DIS-TRICT MEETINGS

Introduced by: Eighth District Medical Society Referred to: None

Status: Not Adopted

RESOLUTION 86-13 ISMA OPPOSITION TO SCHOOL BASED HEALTH CLINICS

Introduced by: Drs. R. L. Rudesill, H. B. Barnes, J. E. Ramsev

Referred to: Commission on Legislation Added to Policy Manual. No action Status: taken this legislative session; discus-

sions held with ISBH and Education Dept.

RESOLUTION 86-14 COALITION FOR A TOBACCO-FREE SOCIETY Commission on Public Relations Introduced by:

Referred to: Commission on Public Relations Status: Implemented

RESOLUTION 86-15 TOBACCO-FREE SOCIETY Introduced by: Comission on Public Relations Referred to: Commission on Public Relations Status Implemented

RESOLUTION 86-16 PROCEDURES OF MEDICAL LICENSING BOARD Introduced by: Mark M. Bevers, M.D., Fourth

District Trustee Referred to: Board of Trustees

Status: Implemented; article in INDIANA MEDICINE (April 1987)

RESOLUTION 86-17 ORGAN TRANSPLANT TASK FORCE

Introduced by: Fort Wayne Medical Society Referred to: Board of Trustees Status:

Continued monitoring/implementation through ISMA President-elect Dr. MacDougall as liaison with the Governor's Task Force on Organ

Transplants.

RESOLUTION 86-18 MAIL ORDER PRESCRIPTIONS Introduced by: Fort Wayne Medical Society Referred to: Commission on Legislation and Indiana Delegation to AMA

Status: Will be a topic of discussion at PADS interprofessional conference spon-

Status:

sored by ISMA. AMA referred res-RESOLUTION 86-27 ANABOLIC STEROIDS olution to its Board of Trustees for Introduced by: further study. Referred to: Commissions RESOLUTION 86-19 ISMA-HMSS MODEL MEDICAL STAFF BYLAWS ISMA-HMSS Introduced by: RESOLUTION 86-28 Referred to: Hospital Medical Staff Section FIRST Status: Endorsement of Model Bylaws noted in Policy Manual with ongoing annual Introduced by: review of the Bylaws by the HMS Referred to: Commissions Section Status: RESOLUTION 86-20 INDIANA STATE BOARD OF HEALTH RADIOLOGIC HEALTH PROGRAM Introduced by: ISMA Hospital Medical Staff Section Referred to: Commission on Legislation RESOLUTION 86-29 Budget adopted by legislature in-Status: cluded overall increased funding for Introduced by: ISBH-will monitor in next session Referred to: None in the supplemental budget. Not Adopted RESOLUTION 86-21 HMSS VOTE IN ISMA HOUSE OF DELEGATES Introduced by: ISMA Hospital Medical Staff Section Referred to: Introduced by: None Status: Not Adopted Referred to: None Status: Not adopted RESOLUTION 86-22 PRESCRIPTION ABUSE DATA SYNTHESIS (PADS) PROGRAM RESOLUTION 86-31 Introduced by: Edward L. Langston, M.D. CHANGES Referred to: Legislation and Public Relations Introduced by: Commissions Status: Implemented, Final report issued Referred to: July 1987. Conference will be held in Status: late 1987. RESOLUTION 86-23 PAN AMERICAN GAMES Commission on Sports Medicine Introduced by: Referred to: Sports-Medicine and Public Relations Commissions Introduced by: Status: Implemented Referred to: RESOLUTION 86-24 USE OF PROTECTIVE HEAD-GEAR DURING EQUESTRIAN Malpractice ACTIVITIES Statust Introduced by: Commission on Sports Medicine Referred to: Indiana Delegation to AMA and Sports-Medicine Commission Commissioner. Status: Added to Policy Manual RESOLUTION 86-25 CONSTITUTION AND BYLAWS CHANGES PROGRAMS Introduced by: Fountain-Warren County Medical Introduced by: Society Referred to: None Referred to: Commission on Constitution and Not adopted Status: Bylaws RESOLUTION 86-34 Status: First Resolve implemented; Second SOCIETIES Resolve not adopted Introduced by: RESOLUTION 86-26 PASSAGE OF TOBACCO-FREE Referred to: None SOCIETY LEGISLATION Status: Not adopted Introduced by: Commission on Legislation RESOLUTION 86-35 Referred to: Commission on Legislation Status: Passed three new state laws: (1) in-Introduced by: Lake County Medical Society crease minimum age for sale of

tobacco to minors. (2) establish

designated nonsmoking areas in

government buildings and health facilities, (3) increase tobacco tax.

Commission on Sports Medicine Sports Medicine and Legislation Added to Policy Manual MEDICARE TREATMENT OF YEAR PHYSICIANS DURING THE FEE FREEZE Thomas A. Barley, M.D. Medical Services and Legislation Implemented. Statewide letter sent to all physicians to write letters to Congressmen on this issue as part of AMA's MAAC amendments. COMMUNICATIONS BETWEEN CONSTITUENT SOCIETIES Lake County Medical Society RESOLUTION 86-30 PROHIBIT LIABILITY SUITS AGAINST PHYSICIANS TREAT-ING MEDICAID PATIENTS Lake County Medical Society PUBLIC NOTICE OF MEDICAL LIABILITY INSURANCE RATE Lake County Medical Society Commission on Legislation Passage of most recent rate increase included a public notice in Indiana Register and a public hearing where ISMA testified. RESOLUTION 86-32 UNIFORM RATES FOR LIABIL-ITY INSURANCE Lake County Medical Society Commission on Legislation and ad hoc Advisory Committee on Medical ISMA testified at recent public hearing on surcharge increase - ongoing discussions with the Insurance RESOLUTION 86-33 FUNDING TO CONSTITUENT SOCIETIES FOR STATEWIDE Lake County Medical Society DUES FOR CONSTITUENT Lake County Medical Society GUIDELINES FOR SECOND MEDICAL OPINIONS

Subcommission on Insurance and

Commission on Public Relations

Being implemented

Referred to:

Status:

Status of 1986 Resolutions

RESOLUTION 86-36 Introduced by: Referred to: Status:	LaGrange County Medical Society Commission on Legislation Ongoing and implemented	RESOLUTION 86-44	REGARDING RESOLUTION 85-8, "ISMA MEMBERSHIP SUSPEN- SION AS A RESULT OF MEDICAL LICENSING BOARD SUSPEN- SION!"
RESOLUTION 86-37 Introduced by: Referred to: Status:	PURCHASE OF IPRO STOCK Vigo County Medical Society None Not adopted	Introduced by: Referred to:	SION" Board of Trustees Commission on Constitution and Bylaws
RESOLUTION 86-38	\$1.00 INCREASE IN ISMA DUES TO ASSIST THE ISMA AUXILIARY	Status:	Clarified and amended resolution to be submitted to the 1987 House of Delegates (87-2) from the Board of Trustees
Introduced by:	Paul Siebenmorgen, M.D., President, ISMA	RESOLUTION 86-45	SUPPORT AND PROMOTION OF PRIVATE PRACTICE
Referred to: Status:	None Not adopted	Introduced by: Referred to:	Miami County Medical Society ISMA Policy Manual
RESOLUTION 86-39	IMMUNIZATIONS Edward L. Langston, M.D.	Status:	Implemented
Introduced by: Referred to: Status:	Commission on Legislation Ongoing discussion with ISBH and	RESOLUTION 86-46 Introduced by:	ACTIVITIES OF IMRO/IPRO Vanderburgh County Medical Society
	public health officers; also submitted to AMA which was referred to its Board of Trustees for study.	Referred to: Status:	Commission on Medical Services Being implemented
RESOLUTION 86-40	SODIUM CONTENTS OF "FAST FOODS"	RESOLUTION 86-47	POSTOPERATIVE CARE OF SURGICAL PATIENTS
Introduced by: Referred to: Status:	Third District Medical Society Commission on Public Relations Implemented	Introduced by: Referred to: Status:	Paul Honan, M.D. Commission on Medical Services Being implemented
	ANCILLARY MEMBERSHIP FOR OUT-OF-STATE PHYSICIANS	RESOLUTION 86-48 Introduced by:	PHYSICIAN HEALTH OFFICERS Everett Bickers, M.D., Indiana Public Health Physicians
Introduced by: Referred to: Status:	Resident Medical Society None Not adopted	Referred to: Status:	Commission on Legislation Monitoring and ongoing
RESOLUTION 86-42		RESOLUTION	COMMENDATION FOR GILBERT M. WILHELMUS, M.D.
Introduced by: Referred to: Status:	PHYSICIAN FAMILIES Resident Medical Society None Not adopted	Introduced by: Referred to: Status:	ISMA House of Delegates American Medical Association Resolution to AMA House; plaque presented by ISMA
RESOLUTION 86-43	DISTRICT MEETINGS HELD AT ANNUAL CONVENTION	RESOLUTION	COMMENDATION FOR MALCOLM
Introduced by:	Mark Bevers, M.D., Fourth District Trustee	Introduced by:	O. SCAMAHORN, M.D. ISMA House of Delegates
Referred to: Status:	None Not adopted	Referred to: Status:	American Medical Association Resolution to AMA House; plaque presented by ISMA

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CONTINUED FROM PAGE 991

developing programs which can increase physician awareness of those areas of practice which are susceptible to risk. In addition, we will provide ongoing information to physicians, helping to update them on medico-legal and loss prevention issues which affect their practices.

We will maintain our emphasis on adequacy of rates and reserves and will promote continuing fiscal stability. The progress of Physicians Insurance Company of Indiana, coupled with the encouraging sucesses which have already occurred in 1987, have brought into clear focus the soundness of our operational plan. While we have grown significantly since 1982, we will never lose sight of the most essential aspect of our business, to provide continuing security and protection for each of our policyholders.

3e 3 prescribing, see complete prescribing information in SK&F CO its ure or PDR. The following is a brief summary.

s drug is not indicated for initial therapy of edema or hyperten-edema or hypertension requires therapy titrated to the individual. Its combination represents the dosage so determined, its use r/be more convenient in patient management freatment of hyper-tion and edema is not static, but must be reevaluated as conons in each patient warrant.

to indications. Concomitant use with other potassium-sparing agents at a spironolactone or amilioride Further use in anuta, progressive pro hepatic dysfunction, hyperkalemia. Pre-existing elevated serum crisium, hypersensitivity to either component or other sulfonamide-

er'd drugs.

We ngs: Oo not use potassium supplements, dietary or otherwise, nis hypokalemia develops or dietary intake of potassium is markedly mred. If supplementary potassium is needed, potassium tablets not not be used. Hyperkalemia can occur, and has been associated nardiac irregulanties. It is more likely in the severely ill, with urine of eless than one liter/day, the elderly and diabetics with suspected ritimed renal insufficiency. Periodically, serum Kr. levels should be nined. If hyperkalemia develops, substitute a thiazide alone, restrict take. Associated widened ORS complex or arrhythmia requires tradditional therapy. Thiazides cross the placental barrier and p. rin cord blood. Use in pregnancy requires weighing anticipated eits against possible hazards, including fetal or neonatal jaundice, to bocytopenia, other adverse reactions seen in adults. Thiazides or rand triamterene may appear in breast milk If their use is essential, intent should stop nursing. Adequate information on use in children available. Sensitivity reactions may occur in patients with or with history of allergy or bronchial asthma. Possible exacerbation or tion of systemic lupus erythematosus has been reported with dediuretics.

in history of allergy of bronchial ashma. Possible exacerbation or alton of systemic lupus erythematosus has been reported with inde diuretics.

In utions: The broavailability of the hydrochlorothiazide component of the compone

erse Reactions: Muscle cramps, weakness, dizziness, headache, mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other natological conditions, nausea and vomiting, diarrhea, constipation, 7 gastrointestinal disturbances; postural hypotension (may be ravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, sithesias, icterus, pancreatitis, xanthopsia and respiratory distress uding pneumonitis and pulmonary edema, transient blurred vision, adentits, and vertigo have occurred with thiazides alone. Triamterene been lound in renal stones in association with other usual calculus inponents. Rare incidents of acute interstitial nephritis have been offer the profession of the professio

plied. 'Dyazide' is supplied as a red and white capsule, in bottles of 10 capsules, Single Unit Packages (unit-dose) of 100 (intended for litutional use only); in Patient-Pak™ unit-of-use bottles of 100.

In Hypertension*... When You Need to Conserve K+

Remember the Unique Red and White Capsule: Your Assurance of SK&F Quality

Serum K⁺ and BUN should be checked periodically (see Warnings and Precautions).





Over 20 Years of Confidence

The unique red and white Dyazide® capsule: Your assurance of SK&F quality.





a product of SK&F CO. There's never been a better time for half



IN PREMARIN®



Proven benefits beyond relief of vasomotor symptoms

No other estrogen proven effective for osteoporosis

Only conjugated estrogens tablets have established efficacy in both osteoporosis¹ and vasomotor symptoms* at 0.625 mg/day. No other estrogen, oral or transdermal, has established clinical evidence or minimum effective dose in both indications.

No estrogen proven safer

PREMARIN is the most extensively tested estrogen, with an unsurpassed record of long-term safety.

And clinical evidence shows a significantly reduced risk of endometrial hyperplasia when cycled with a progestin.²

PREMARIN (conjugated estrogens tablets)

Most trusted for more reasons

*PREMARIN is indicated for moderate-to-severe vasomotor symptoms

Please see following page for brief summary of prescribing information.

For moderate-to-severe vasomotor symptoms and for osteoporosis

PREMARIN[®]

(conjugated estrogens tablets)











0.3 mg 0.625 mg

0.9 mg

 $2.5 \, \mathrm{mg}$

The appearance of these tablets is a trademark of Averst Laboratories

BRIEF SUMMARY FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE

PREMARIN' Brand of conjugated estrogens tablets. USP PREMARIN' Brand of conjugated estrogens Vaginal Cream, in a nonliquelying base

1 ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA Three independent, case-controlled studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incredice crates of endometrial cancer have increased sharply since 1969 in eight different areas of the funited States with population-based cancer reporting systems, an increase which may be related to the rap dly expanding use of estrogens during the last decade. The three case-controlled studies reported that the risk of endometrial cancer in estrogen users was about 4 5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose in view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated the patient should be reassessed on at least a semi-annual basis to determine the need for continued therapy. Although the evidence must be considered preliminary one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration, it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding adequate diagnostic measures should be undertaken for rule out malignancy. There is not evidence at present that inatural estrogens are more or less hazardous than "synthetic" estrogens at equi-estrogen was easiered to the other strongens and progestogens, during early pregnancy may seriously damage the oftspring it has been shown that temales exposed in utero to diethylstibestrol a nonsteroidal estrog ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

DESCRIPTION: PREMARIN (conjugated estrogens USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares urine. I contains estrone equifin, and 17a-dihydroequifin, together with smaller amounts of 17a-estratory dequifierin and 17a-dihydroequifierin as salls of their sulfate esters fablets are available in 0.3 mg. 0.625 mg. 0.9 mg. 1.25 mg. and 2.5 mg. strengths of conjugated estrogens. Cream is available as 0.625 mg. conjugated.

estrogens per gram

IMDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP) Moderate-to-severe vasomotor
symptoms associated with the menopause (There is no evidence that estrogens are effective for nervous
symptoms or depression without associated vasomotor symptoms and they should not be used to teal succonditions.) Osteophorosis (abnormally low bone mass). Attophic vaginitis Kraurosis vulviae Female castration
PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of alrophic vaginitis and

PREMARIN (conjugated estrogens) Valganal Cream is indicated in the treatment of atrophic vaginitis and
PREMARIN (conjugated estrogens) Valganal Cream is indicated in the treatment of atrophic vaginitis and
Naturosis vulvae
PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS
USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING)

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be
utized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have
reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the
endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial
carcinoma has not been clearly established. There are possible additional risks which may be associated with the
inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS). The choice of progestin and
dosage may be important product labeling should be reviewed to minimize possible adverse effects.
CONTRAINDICATIONS. Estrogens should not be used in women (or men) with any of the following conditions.
I known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic
disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy (see Boxed
Warning). 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophilebits or thromboembolic disorders
6. A past history of thrombophilebits thrombosis, or thromboembolic disorders associated with previous
estrogen use (except) when used in treatment of breast or prostatic malignancy).

WARNINGS: Estrogens have been reported to increase the risk of endometrial carcinoma (see Boxed Warning) 4.
However a recent large case-controlled study indicated no increase in risk of breast cancer in postamenopausal
winner. A recent study has reported a 2-to 3-told increase in the risk of endometrial carc

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to freat prostatic or breast cancer or postpartum breast engorgement in has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases such as thrombophilebitis, pulmonary embolism stroke and improcardial intarchion. Cases of retinal thrombosis menenter chrombopsis and optic neutris have een reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives at leasible, estrogen should be discontinued at least. 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged in mobilization. Estrogens should not be used in persons with active thrombophibitis. Informboembolic disorders or n persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses 15 mg conjugated estrogens per day) comparable to those used to treat cancer of the prostate and breast have been shown to increase the risk of nontatal myocardial infarction pulmonary embolism, and thrombophibitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

For atrophic vaginitis

PREMARIN (conjugated estrogens)

Vaginal Cream

 $0.625 \, \text{mg/g}$



Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tender abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estry containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopaus blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observing the estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastas. PRECAUTIONS. Physical examination and a complete medical and family history should be taken prior to initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic or initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic or initiation of any estrogen should michude a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer one year without another physical examination being performed. Conditions influenced by fluid refention, as asthma epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine blee mastodynia etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with ha in incre incidence of mental depression. Patients with a history of depression should be carefully observed. Pre-evirulation learn specimens are submitted. If Jaundice develops in any patient receiving estrogen medication should be discontinued while the cause is investigated. Estrogens should be used with car patients with impaired liver function renal insulficiency metabolic bone diseases associated with hypercalce or in young patients with impaired liver function.

As may include adverse effects on carbonyonae and ripid metaborism.
The following changes may be expected with larger doses of estrogen
a Increased sulfobromophihalein retention.
b Increased prothrombin and factors VII, VIII, IX, and X, decreased antithrombin 3, increased norepinephr.

b Increased prothrombin and factors VII, VIII, IX and X decreased antithrombin 3, increased norepinephr induced platelet aggregability c Increased through binding globulin (TBG) leading to increased circulating fotal thyroid hormone measured by PBI. T₃ by column or T₄ by radioimmunoassay. Free T₃ resin uptake is decreased reflecting elevated TBG, tree T₄ concentration is unaltered d Impaired glucose tolerance e Decreased pregnanediol excretion. The educed response to metyrapone lest g Reduced serum totate concentration.

neuvicus response to metriapone test
g. Reduced serum foliate concentration
h. Increased serum triglyceride and phospholipid concentration
h. Increased serum triglyceride and phospholipid concentration
h. Increased serum triglyceride and phospholipid concentration
h. As a general principle, the administration of any drug to nursing mothers should be done only when cle
necessary since many drugs are excreted in human milk
Long-term, continuous administration of natural and synthetic estrogens in certain animal species increa
the frequency of carcinomas of the breast, cervix vagina, and liver However, in a recent, large case-contro
study of postmenopausal women there was no increase in risk of breast cancer with use of conjugated estrog
ADVERSE REACTIONS. The following have been reported with estrogenic therapy including oral
raceptives breakthrough bleeding spotting change in menstrual flow dysmenorrhea, premenstrual-syndrome, amenorrhea during and after treatment, increase in size of uterine fibromyomata, vaginal candidia
change in cervical erosion and in degree of cervical secretion, cystins-like syndrome, lenderness, enlargem
secretion (of breasts), nausea vomiting, abdominal cramps, bloating, cholestatic jaundice, chloasma
melasma which may persist when drug is discontinued, erythema multiforme, erythema nodosum, hemorite
eruption loss of scalp hair, hirsuitism, sleepening of corneal curvature, infolerance to confact lenses, headac
imgranie, dizziness, mental depression, chorea, increase or decrease in weight, reduced carbohydrate tolerar
aggravation of porphyria, edema, changes in libido
ACUTE OVEROOSAGE: May cause nausea, and withdrawal bleeding may occur in females
DOSAGE AND ADMINISTRATION.
PREMARIN* Brand of conjugated estrogens tablets, USP

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PREMARIN* Brand of conjugated estrogens tablets, USP

I Given cyclically for short-term use only. For treatment of moderate-to-severe vasionolor symptoms, alrop vaginitis or klaurosis vulvae associated with the menopause (0.3 mg to 1.25 mg or more daily). The lowest dit that will control symptoms should be chosen and medication should be discontinued as promptly as possit Administration should be cyclic (eg. Ihree weeks on and one week off). Attempts to discontinue or ta medication should be made at three- to six-month intervals.

2 Given cyclically. Osteoporosis Female castration. Osteoporosis.—0.625 mg daily. Administration should cyclic (eg. three weeks on and one week off). Female castration.—1.25 mg daily, cyclically. Adjust upward downward according to response of the patient. For maintenance, adjust dosage to lowest level that will prove effective control.

effective control

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measu malignancy in the event of persistent or recurring abnormal vaginal bleeding

PREMARIN Brand of conjugated estrogens Vaginal Cream ven cyclically for short-lem use only For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued.

ompty as possible. Administration should be cyclic (eg. three weeks on and one week off). Attempts to discontinue or taper medication should be made at three. To six-month intervals. Usual dosage range. 2 g to 4 g daily intravaginally depending on the severity of the condition. Treated patients with an infact uterus should be monitored closely for signs of endometrial cancer.

appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurri

Netereffices.
1. Lindsay R. Hart DM. Clark DM. The minimum effective dose of estrogen for prevention of postmenopaus bone loss. Obstet Gynecol 1984;63:759-763. 2. Studd JWW. Thom MH. Paterson MEL, et al. The prevention at retainment of endometrial pathology in postmenopausal women receiving exogenous estrogens. In Pasetto. Paoletti. R. Ambrus JL (eds). The Menopause and Postmenopause Lancaster. England. MTP. Press. Ltd. 198.

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Radiation Therapy

CONTINUED FROM PAGES 921-924

- Tumor cells will compete with each other for oxygen and this may result in areas of anoxia and hypoxia within a tumor.
 - a. True
 - b. False
- Oxygenated tumor cells are more sensitive to radiation than hypoxic tumor cells.
 - a. True
 - b. False
- 3. The rest period following the first course of irradiation during split-course therapy may allow tumor shrinkage and, thereby, may allow the therapist to reduce the size of the field and spare normal tissue.
 - a. True
 - b. False

- 4. One advantage of split-course irradiation is that treatment need not be prolonged and, following a rest period, those patients who deteriorate or develop metastatic disease can be spared additional irradiation.
 - a. True
 - b. False
- In terms of local control, survival, and complications, biological dose is more important than physical dose.
 - a. True
 - b. False
- Split-course irradiation has resulted in a significant increase in survival over conventional irradiation.
 - a. True
 - b. False

- 7. The Radiation Therapy Oncology Group (ROTG) has clearly demonstrated that split-course irradiation for lung cancer is associated with fewer complications than continuous course irradiation.
 - a. True
 - b. False
- Patients undergoing split-course irradiation do not require as much treatment planning as patients undergoing radical high dose conventional irradiation.
 - a. True
 - b. False
- Patients with symptoms from their lung cancer such as hemoptysis, pain, or dyspnea may benefit from palliative irradiation.
 - a. True
 - b. False

SEPTEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the September 1987 issue: "Magnetic Resonance in the Evaluation of Multiple Sclerosis."

1.	b	6.	е
2.	c	7.	b
3.	b	8.	d
4.	c	9.	b
-		4.0	- 1

10. A patient with lung cancer involving the mediastinum complaining of hoarseness of several weeks duration has a high likelihood of having return of a normal voice following chest irradiation.

a. True

b. False

Answer sheet for Quiz: (Radiation Therapy)

1. a b 6. a b 2. a b 7. a b 3. a b 8. a b 4. a b 9. a b 5. a b 10. a b

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of Indiana Medicine.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Nov. 10, 1987 to the address appearing at the top of this page.

BOOK REVIEWS

OCCUPATIONAL MEDICINE: The Microelectronics Industry, Joseph LaDou, M.D., editor. Copyright 1986 by State of the Art Reviews in Occupa tional Medicine, Hanley & Belfus, Inc., 210 S. 13th St., Philadelphia 19107. Hardcover, published four times annually; \$48 per year or single copies, \$22. (Reviewed by Thomas J. Conway, M.D., Terre Haute)

STATE OF THE ART REVIEWS: Occupational Medicine, began in 1986 and the first issue (Volume 1, Number 1) addressed the microelectronics industry. Fourteen separate articles were assembled, each of which describes some aspect of the health hazards faced by workers in assorted Silicon Valleys. Joseph LaDou, M.D., of San Francisco, served as guest editor. He was joined by 14 fellow California investigators, two folks each from Worcester, Mass. and Denver, and by Robert Olin, M.D., Ph.D. from Stockholm, Sweden.

Most of those authors pointed out the paradox that those highly prized clean and tidy high tech manufacturing plants are fraught with enrivonmental danger. Contamination of air, soil and water in and around electronics production facilities has already happened; and perils as yet unknown are feared for the future. The articles in this issue of Occupational Medicine

"Certainly you can have a second opinion."

describe in detail the processes used in semiconductor fabrication. Thereby is demonstrated the use of antimony, arsenic, boron, cadmium, formaldehyde, gallium, hydrofluoric acid, ionizing and non-ionizing radiation, organic solvents, phosphorus, polyvynyl compounds, tellurium, toxic gases, and urethane at certain stages of semiconductor production. The details of the poisonings possible from these chemicals make grim reading.

This book is neatly presented, nicely edited, interesting and informative. The several articles cite 310 references, only 11 of which predate the year 1960. There are few "typos." The articles demonstrate the complexities of Occupational Medicine and should alert physicians, engineers and public health officials to the new levels of preparedness demanded in this electronic era. Somehow Bhopal sounds like that town in the next county when one learns that "a gas cylinder containing 200 cu. ft. of ONLY 10% arsine released into a 10,000 cu.ft. area with standard exhaust would produce lethal levels of gas for approximately 10 minutes."

THE CONTROL YOUR HIGH BLOOD PRESSURE COOKBOOK, by Cleaves M. Bennett, M.D., and Cristine Newport. Copyright 1987, Doubleday, Garden City, N.Y. 248 pages, hard-cover, \$16.95. (Reviewed by I.E. Michael, M.D., Indianapolis)

This treatise is a very detailed summary of the dietary control of hypertension. The authors collaborated for several years to develop tasty menus that virtually eliminate sodium, sugar and fat from the diet.

During the first two chapters, Dr. Bennett gives a concise summary of the causes and control of hypertension, followed by, "What You Need to Know to Start a Hypertension-Control Diet." Chapter three deals with, "Preparing the Foods for Your New Diet." He notes that some patients may be unable to accept the diet "cold turkey," but may be able to institute the program

over a period of time. The next chapter is devoted to a detailed discussion of "Eating Nutritiously Away from Home." The remainder of the book lists numerous, detailed menus, even including a number of ethnic foods.

This volume is clearly and concisely written and should become the standard for those hypertensive patients who are willing to follow a rigid dietary regimen. If successful, they could avoid the numerous side-reactions of medication, and the costs of a medical regimen could be eliminated.

One can select a very well-rounded diet; also, the volume may be useful for patients with a strong family history of hypertension and heart disease.

HEALTH AND MEDICINE IN THE ANGLICAN TRADITION, by David H. Smith. Copyright 1986, Crossroad Publishing Co., 370 Lexington Ave., New York, N.Y. 10017. 115 pages, hard-cover, \$14.95. (Reviewed by Rodney A. Mannion, M.D., LaPorte)

Over the centuries the essence of Anglo-Catholicism became known as the 'via media' or middle way. While relating all human actions to Christ's Resurrection and Incarnation the Anglicans have had what I call a common sense attitude to theology and ethics. The suggestions in this book epitomize their moderate and humane view.

There are four other volumes in this series concerning the other great Western religions such as Roman Catholicism, Judaism and the Protestants. This one has an introduction by Martin E. Marty (who is a Lutheran professional theologian) and five chapters. There is a summary of the tenets of Anglicanism especially relating to medicine and the ministry to the sick, theological aspects and finally, the best section, "Sexuality and New Life."

In our country we are talking about Episcopalians and, according to this book, their attitude is very civilized. They believe in the wholeness of the human being—mind, spirit and body.

They perhaps differ from others in giving the community within which a person lives and exists an exceptional importance. It seems all human actions must be seen as occurring within a social context. Thus, although abortion is naturally condemned, the decision must still be made in the context of whether the child would have a satisfactory life and so on.

A worthwhile book to enlarge a doctor's ethical and moral outlook.

MEDICAL EVALUATION OF THE SURGICAL PATIENT, edited by Robert J. Bolt, M.D. Copyright 1987, Futura Publishing Co., P.O. Box 330, 295 Main St., Mt. Kosco, N.Y. 10549. 440 pages, hardcover, \$64. (Reviewed by William F. Stewart, M.D., Evansville)

As a Family Practice resident, I frequently shared responsibilities for a patient's pre- and post-operative care. This obviously necessitates pre-operative evaluation with correction, where possible, of recognized problems. In this way the patient's chances for a successful outcome from any surgical procedure are greatly enhanced. Much of the success or failure in pre-operative care will be reflected in the post-operative course.

Medical Evaluation of the Surgical Patient succeeds in presenting frequently encountered problems in a very succinct and informative manner. I found the content appropriate, practical, and enlightening in an area of expertise I consider essential to the art of general medicine. The text is easily read, even by slower individuals such

as myself. It serves to fill a void from medical school regarding medical care in the peri-operative period. I found the guidelines and principles as defined in "Part I: General Considerations" particularly helpful. Boundaries are well defined.

While I would encourage anyone having contact with the surgical patient to read this text front to back, it remarkably serves as an equally invaluable reference text.

Criticisms are not readily available to this reader. I would like to have seen additional discussion with regard to the cancer patient. I also wonder if the cost of the text will preclude most house officers and residents benefit of the text.

This text is a welcomed addition to the library.

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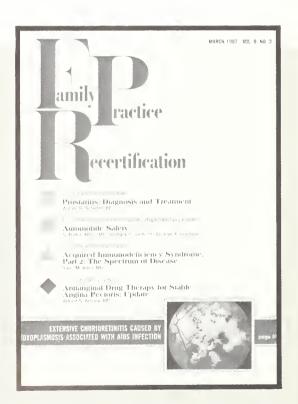
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AUXILIARY REPORT

Anne Throop, Indianapolis ISMA Auxiliary President 1987-88



Mrs. Sylvia Scheeringa, Auxiliary health projects chairman, discusses this Auxiliary exhibit with an interested visitor.

This year's ISMA convention Auxiliary program will be based on the AMA's Adolescent Health Initiative, an ongoing, comprehensive plan to help teens grow into healthy adults.

The Saturday morning seminar at the Radisson Plaza Hotel in Indianapolis will begin with refreshments at 9:30 and get underway at 10. Dr. William S. Hotchkiss, AMA president, has been invited to present opening remarks.

The two-hour session will feature a presentation by Bonnie Wilford, acting director of the AMA's Department of Substance Abuse: afterward, she and Dr. Ed Langston of Flora will lead a panel discussion dealing with adolescent health issues, including the touchy subject of AIDS and AIDS education. A recent AMA white paper contains the frightening facts about substance abuse, sexuality and pregnancy, teen suicide, victimization, violence, emotional disorders and physical problems of our teen population—our future!

This year's program promises to be an exciting and educational experience.

Throughout the convention, Auxiliary board members will be on hand to greet the spouses of delegates. Joann Orman of Vigo County, member-



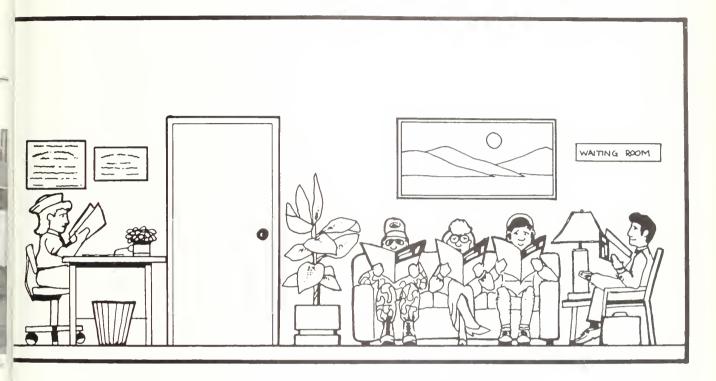
Anne Throop examines the AMA's new teen suicide-prevention poster.

at-large coordinator for the state, will be available to answer membership questions. Sylvia Scheeringa, health chairman, will be on hand to answer questions about our health projects; she will be located at our booth which will be filled with health-related materials. Once again, her booth will contain a No Smoking display, which last year earned her quite a bit of attention. A new No Smoking pin will be available for sale during the convention.

The Auxiliary is also happy to be able to bring back Helana, the "jewelry lady." She will be present to assist delegates and spouses with jewelry selections, just in time for Christmas gifts. Forty percent of all sales will benefit the AMA Education and Research Foundation.

The ISMA Auxiliary invites all spouses to participate and hopes that non-members will give us a chance to tell about the changes that have taken place within the organization.

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CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

THE FIFTH BIENNIAL SEMINAR ON COMMUNITY CANCER CARE will be Nov. 18 and 19 at the Indianapolis Hilton. Sponsors of the conference include: Community Hospitals of Indianapolis, Methodist Hospitals of Indiana, Methodist Hospitals of Gary, Hospitals of South Bend, Ohio State University Comprehensive Cancer Center, and St. Francis, St. Vincent and Wabash County Hospitals.

Objectives include: 1) Evaluate the liability, handling, patient education, OSHA guidelines and risk management of hazardous wastes-antineoplastic drug materials; 2) Discuss the status of Biological Response Modifiers, their potentials and problems, and their probable impact on community hospital cancer programs in the future; 3) Discuss the ACCC standards, their implications, price of implications, and how they compare to the hospice standards; 4) Recognize the impact of detection, pain control and chemotherapy in the elderly; 5) Discuss innovative clinical and management aspects of a rehabilitation program for the cancer patient.

Some of the out-of-state faculty will be: Paul P. Carbone, M.D., director, Wisconsin Clinical Cancer Center; Robert Enck, M.D., director, Ohio Riverside Methodist Hospital; Michael Grever, M.D., Ohio State University Comprehensive Cancer Center; Ronald Herberman, M.D., director, Pittsburgh Cancer Institute; Russell Portneoy, M.D., director, Unified Pain Service; Harvey W. Rogers, M.S., Environ Systems Section, Washington, D.C.; Richard R. Williams, Ph.D., Ohio State University Comprehensive Cancer Center.

CURRENT CONCEPTS IN MEDICAL ONCOLOGY '87 is a comprehensive, five-day postgraduate course designed for medical oncologists and other physicians who treat cancer patients. The course is \$500 (\$350 for residents); included is the course syllabus, refreshments during the breaks and four buffet luncheons. For further information write: Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, N.Y. 10021. The course will be conducted Oct. 19-23.

THE ELEVENTH ANNUAL CANCER SYMPOSIUM, sponsored by Scripps Memorial Hospitals Cancer Center, in scheduled for Oct. 19-21 at the Sheraton Harbor Island Hotel. Some of the topics included in the accreditation course are: Gynecologic Malignancy, Neoadjuvant/Adjuvant Therapy, Clinical Problems in Breast Cancer, AIDS and Hematologic Malignancies, Enrollment is \$350. For further information contact: Nomi Feldman, 3770 Tansy, San Diego, Calif. 92121. (619) 453-6322. Next dates will be Nov. 7-9, 1988.

THE SIXTH ANNUAL CINCINNATI CANCER CONFERENCE, to be held Nov. 13 and 14, covers Kaposi's Sarcoma, Soft Tissue Sarcoma and Osteosarcoma. As always, the conference features an outstanding faculty. The Academy of Medicine of Cincinnati, the American Cancer Society and the University of Cincinnati School of Medicine join the host, Bethesda Hospital, in sponsoring the conference. The program is approved for 10.5 AMA Category 1 hours, as well as 10.5 prescribed hours by the American

Academy of Family Physicians. A \$200 fee includes breakfast, lunch and refreshments. Contact: Tom O'Connor, Bethesda Hospital, Inc., Location 00348, Cincinnati, Ohio 45264.

THE ONCOLOGY NURSING SOCIETY offers an excellent supply of educational materials. These materials include a certification exam study guide with a syllabus. The following are just a few of the guides offered: Risk Factors and Coping Skills for the Nurse, Early Cancer Detection, The Cancer Care Continuum (home health care delivery), Informed Consent & Legal Issues. Individual lectures are also available on VHS or Beta. For more information, write to: National Nursing Network, 250 W. 49th St., Suite 401, New York, N.Y. 10019.

MTC (MAKE TODAY COUNT) is sponsored by the Little Red Door in Indianapolis. MTC is a non-profit organization for persons with lifethreatening illnesses. It is not a "therapy" group, nor are the monthly sessions. It is a way of sharing common concerns, discussing new resources available, and talking about common ways to cope with mutual problems. MTC meetings are held at First Meridian Presbyterian Church at 7 p.m. on the second Thursday of each month. MTC is a national organization founded because of the need to improve the quality of the life of persons and their families facing a serious illness. For information call (317) 925-5595.



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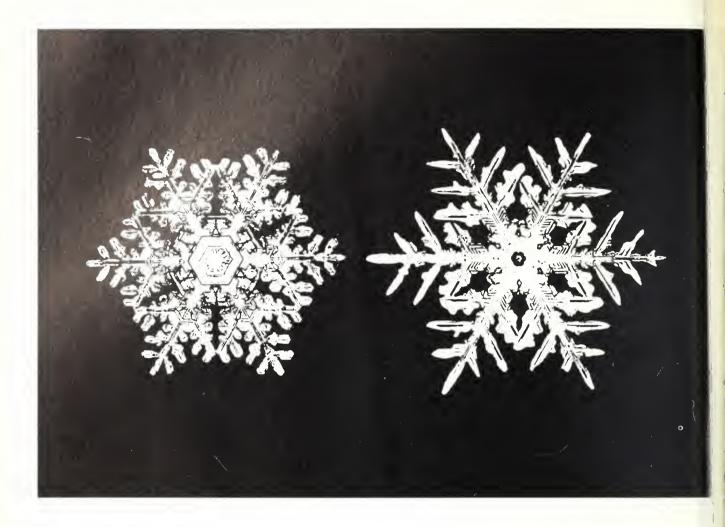
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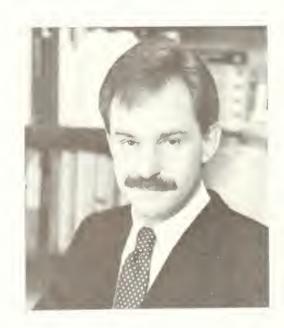
October, 1987

A NEWSLETTER OF INDIANA MEDICAL HISTORY

Society Schedules Session on Nineteenth-Century American Medicine

Nineteenth-century American medicine will be the heme of a morning-long session sponsored by the Medial History Committee at the Indiana Historical Society's annual History Conference to be held on Saturday, lovember 7, 1987, at the Airport Holiday Inn. The keylote speaker for the session will be John Harley Warner, 'h.D., from Yale University. His paper, "The Transformation of Medical Therapeutics in Nineteenth-Century america," will focus on the shift from an ideal of individualism to one of universalism in American medical herapy.

Although bloodletting and purging were commonly mployed in antebellum America, many physicians nsisted that these treatments could not be employed ndiscriminately. In determining the appropriate therapy or a patient, the doctor often considered a patient's ndividual characteristics, such as his or her ethnicity, ge, gender, socioeconomic position, habits, and place of esidence. Treatment was thus matched not to a specific lisease entity but rather to the sick individual. According o this belief, a treatment valid in one part of the country night be inappropriate in another. Regional variations in limate, topography, settlement patterns, and vegetation, or example, demanded distinctly northern, western, and outhern therapeutics. Moreover, therapies prescribed or Americans might be different than those for Euro-Deans; therapies for black Americans might be different han those for white Americans; and therapies for immigrants might be different than those for the native born. During the first half of the nineteenth century, physicians viewed universal therapeutic rules as invalid, and moreover, as clinically dangerous. This view toward universalism, however, began to change in the two decades following the Civil War. Some physicians turned to experimental physiology to justify universalism in therapeutics. Yet, the movement toward universalism met with resistance from a number of physicians who



John Harley Warner

believed that this approach would not only undermine the physician's attention to the sick individual but also his professional identity and morality.

Warner is author of a number of articles on nineteenth-century medical therapeutics and has recently published *The Therapeutic Perspective: Medical Practice, Knowledge, and Identity in America, 1820-1885* (Harvard University Press, 1986). He is presently an assistant professor of the history of medicine at Yale University and has been a research fellow at the Wellcome Institute for the History of Medicine in London and a teaching fellow in the Department of the History of Science at Harvard University, where he received his doctorate in the history of science.

(continued on Page 4)

Museum and Society Receive Collection of Indianapolis Homeopath

Physician and medical educator Oliver Wendell Holmes (1809-1894) once noted that if all medicines in use during the first half of the nineteenth century were cast into the ocean, "it would be so much better for mankind and so much worse for the fishes." Given the harshness of early nineteenth-century remedies, it is not surprising that many patients sought milder forms of treatment. For some homeopathy provided a suitable alternative to the bloodletting and purging regimens of orthodox physicians.

Samuel Christian Hahnemann (1755-1843), a formally trained, German physician who became disillusioned with orthodox therapies, developed homeopathy in the 1790s. He based his system of medicine upon the healing power of nature and three basic tenets: the law of similars, the law of infinitesimals, and the theory that all chronic illness results from suppression of the itch, or psora. Through various tests or "drug provings," Hahnemann postulated that a disease could be cured by medicines which had the properties of causing in healthy persons the symptoms of the disease to be treated. He also believed that when medicines were diluted, or given in miniscule doses (called dilutions), they were more effective. Homeopathy was different from most unorthodox medicine at this time in that it was based on research, rather than trial and error. Moreover, its practitioners

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Stackeroot Extract is a joint publication of the Indiana Historical Society's Medical History Committee (315 West Ohio Street, Indianapolis, Indiana 46202) and the Indiana Medical History Museum (Old Pathology Building, 3000 West Washington Street, Indianapolis, Indiana 46222). The newsletter is mailed to members of both the committee and the museum.

Charles A. Bonsett, M.D., *Editor* Ann G. Carmichael, MD., Ph.D., *Asst. Editor* Katherine Mandusic McDonell, *Managing Editor*

Submit all items for publication in the newsletter and inquiries about membership information to the Managing Editor, c/o Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202

Snakeroot Extract derives its name from the white snakeroot plant, a plant that is significant in Indiana medical history. For years, a mysterious disease called milk sickness plagued early Hoosiers. There were many theories as to the disease's cause, but the actual cause remained unknown until the 1920s. At that time, the disease was traced to the white snakeroot plant or, rather, to the consumption of milk from cows that had eaten it. The plant contains the poison tremetol.



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Homeopathic physician Willis Benton Stewart (1855-1940 Photograph in the collection of the Indiana Medical Histor Museum

were trained physicians.

Homeopathy spread to the United States in the mid-1820s, but it enjoyed only limited popularity unti the 1840s. With its apparent success during the various cholera epidemics from 1848 to 1852, homeopathic medicine rapidly gained adherents. By 1860 there were approximately 2,500 homeopaths in the United States primarily located in New England, New York, Pennsylva nia, and the Midwest. Many regular physicians believed the sect threatened efforts to eliminate unqualified practitioners and quacks from the profession. They thus labeled homeopathy a form of quackery, even though most of its physicians had orthodox training. The American Medical Association, which was formed in 1846, passed as one of its first measures a code of ethics prohibiting any regular physician from consulting with any homeopathic or sectarian practitioner. This "consultation clause" of the code, although often ignored, effectively drew the battle lines between the regulars and the homeopaths. The homeopaths reciprocated by proclaiming their system of medicine vastly superior to regular medicine. By the 1870s the fighting between the regulars and the homeopaths had escalated. Orthodox physicians began to enforce the code of ethics and to exclude homeopathic physicians from practicing in city hospitals.

Ironically, as the battle between homeopathy and orthodoxy heightened, the therapeutic differences between the two competing systems diminished. By the last quarter of the nineteenth century, orthodox physicians had abandoned some of their harsher therapies and began prescribing moderate doses of milder drugs. Homeopaths, too, became more eclectic and adopted

(continued on Page 3)

Museum and Society Receive Collection

(continued from Page 2)

some orthodox therapies. More and more orthodox physicians and homeopathic physicians came to view each other as colleagues rather than enemies. Furthermore, orthodox doctors had gained little from their attempts to ostracize homeopaths. In fact, the negative campaign had only strengthened the ranks of the homeopaths. Orthodox physicians believed that their efforts to upgrade the profession would be enhanced by assimilating homeopaths into regular medicine. In 1903 the American Medical Association offered membership to those homeopathic physicians willing to renounce their old views. The Association also included homeopaths on medical licensing boards.

Some homeopaths refused to join the American Medical Association, believing that their identity would be lost and that homeopathy would eventually disappear. These fears were justified. Assimilation did result in a drastic decline in the numbers of homeopathic physicians and homeopathic schools from 1900 to 1923. Whereas, in 1900 there were twenty-two homeopathic medical colleges, by 1923 only two schools survived: New York Homeopathic Medical College and Hahnemann University in Philadelphia. The number of homeopathic physicians also dwindled. Moreover, by the 1930s the AMA's policy of amelioration toward homeopaths had ended. The associate editor of the Journal of the American Medical Association termed homeopathy a "medical folly," and the AMA announced that after 1938 homeopathic schools would no longer be considered approved medical schools. In the 1940s and 1950s some homeopaths desperately tried to prevent the extinction of their



Photo by Paut Tracy Witson

Medical case of homeopathic physician Willis Benton Stewart. In the collection of the Indiana Medical History Museum.



Photo by Paul Tracy Wilson

Medicines of homeopathic physician Willis Benton Stewart. In the collection of the Indiana Medical History Museum.

medical system by having the American Medical Association accept homeopathy as a specialty of medicine. This attempt failed, but homeopathy has continued until the present. There are still a few homeopathic physicians in practice, and the American Institute of Homeopathy still offers seminars in homeopathic medicine (although no orthodox medical school teaches homeopathy). Homeopathy, however, has enjoyed much more success abroad. England, France, and Germany all have schools which teach homeopathic medicine. The group enjoys its greatest success in India where there are over 10,000 practitioners and 100 schools.

Whether one views homeopathy as sheer "medical folly" or a legitimate alternative to regular medicine, it still remains a part of the history of health care in nineteenth- and twentieth-century Indiana. Although the group was not very popular in antebellum Indiana, its adherents in the state steadily increased after the Civil War. By the late nineteenth century, over 100 homeopaths practiced in Indianapolis alone.

The Indiana Historical Society and the Indiana Medical History Museum recently received from Allegra Stewart the library and medicines of her father, homeopathic practitioner Willis Benton Stewart (1855-1940). Born in Wabash County, Indiana, Stewart began his medical career by attending the Ohio Medical College in Cincinnati. After a favorable experience with a homeopathic physician, he converted to homeopathy and transferred to Hahnemann University in Chicago. He set up practice in Peru, Indiana, in the late 1880s and then in 1893 moved to Indianapolis, where he continued practicing until his death in 1940. Stewart had three brothers, all of whom followed his lead and became homeopathic physicians. The library and medicines of Dr. Stewart greatly enhance the collections of the Indiana Medical History Museum and the Indiana Historical Society in their attempts to collect and interpret the history of health care in Indiana.

Society Schedules Session

(continued from Page 1)

The morning session will also include two other papers on nineteenth-century American medicine. Steven M. Stowe, Ph.D., from Indiana University at Bloomington, will present a paper entitled "Thinking About Medicine in the Old South," in which he will examine how ordinary country physicians in the rural South talked about medicine among themselves and to their patients. Specifically, Stowe will focus on how medical thought and religious beliefs overlapped. Stowe was recently hired as assistant professor at Indiana University, where he will be teaching courses in history and history of medicine. He holds a doctorate from the State University of New York at Stony Brook and has been on the faculties of New York University and the College of Medicine of Pennsylvania State University. He is author of Intimacy and Power in the Old South: Ritual in the Lives of the Planters (Johns Hopkins University Press, 1987). Katherine Mandusic McDonell, the Society's medical research historian and curator of the Indiana Medical History Museum, will present a paper entitled "Early Nineteenth-Century Surgical Therapeutics in the Rural Midwest." McDonell will discuss various surgical therapeutics available in the United States during the early nineteenth century and how isolation from mainstream medical practice and the limited education of midwestern physicians encouraged a wide variety of surficial techniques. Many of her examples will pertain to surgery in rural Indiana. McDonell's book, *The Surgica Journals of Dr. William A. Lindsay (1795-1876)*, is scheduled for publication by the Indiana Historical Society in 1988.

Those interested in attending these sessions on nine-teenth-century American medicine must register for the Indiana History Conference. The program begins at 9 a.m. on Saturday, November 7, 1987, at the Airport Holiday Inn in Indianapolis. For more information about the conference, please contact the Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202 (317/232-1882).

NOTE: For those physicians unable to attend the morning presentation on nineteenth-century medical therapeutics, Professor John Harley Warner will present a talk and slide show entitled "From Bleeding the Sick to Engineering the Organism: Medical Therapeutics in the Nineteenth Century" at the Indiana Medical History Museum's annual meeting to be held that afternoon (Saturday, November 7, 1987) in conjunction with the Indiana State Medical Association's Annual Convention in Indianapolis. The afternoon session will be held at 3:30 p.m. at the Radisson Hotel in Indianapolis. For more information contact Katherine McDonell at the Indiana Medical History Museum (317/635-7329).

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It is the intent of CritiCard, Inc. to help fund law enforcement efforts to recover missing children by donating a portion of all revenues generated to the I-Search Trust Fund. A secondary

intent is to raise substantial funds for schools, to enhance educational efforts nationwide.

CritiCard provides parents standard forms which they are to complete and sign in order for the microfilm to be prepared. Basic cost of the service is \$9.95 plus applicable tax. For more information, contact CritiCard, Inc., 445 W. Jackson, Centennial Plaza, Naperville, Ill. 60540 - (312) 357-6866, or (outside Illinois) toll free 1-800-331-8801.

Tampon's Absorbency Factor AMA Report Cites Radon Is Likely Cause of Toxic Shock Syndrome, Study Says

Toxic Shock Syndrome (TSS) and the use of tampons have been strongly associated with each other in recent years, but the mechanism of the exact causal factor has been difficult to pinpoint.

Recent carefully conducted investigations have linked the disease and the tampon by the observation that the absorbency factor is the determinator. The greater the tampon absorbency, the greater the risk of TSS, regardless of the chemical composition of the

The study, prepared by researchers at the Centers for Disease Control. Atlanta, appears in the Aug. 21 issue of JAMA.

tampon.

as Important Health Risk

The dangers of radon in U.S. homes, as well as recommendations for further study, are contained in a report by the AMA Council on Scientific Affairs, published in the Aug. 7 issue of JAMA.

Radon, thought to be a causative factor in carcinoma, is a naturally occurring, radioactive gas that varies by localities and tends to accumulate in buildings, especially well insulated ones.

The Council recommends that the AMA take the lead in educating the medical community and the public about radon's health effects; that a conference on radon be arranged by the AMA, federal officials and others; and that studies of radon levels be conducted across the nation.

"You're becoming too visible."

FRACTURES

Commentary

The other day a friend and I were looking at the problem of a patient with acute onset of pain at the right 6th costo-chondral junction. No rib fracture was apparent on good x-rays. He called it, an 'osteo-chondritis of the 6th rib."

I didn't like that. The man's pain came on after a hiccough during his sleep the prior night; there was no cough. The lungs were clear on chest x-ray; no pneumonia or tumor. I felt it was traumatic in origin, probably from the jerk of the hiccough, and my impression was a fresh, non-displaced crack or fracture of the right 6th costochondral junction.

My friend didn't like that; he had learned to call it an osteo-chondritis. We had both gone to good medical schools, with good teachers. "Itis" means inflammation, which is a gradually accelerating process. This man's pain was abrupt.

Neither of us would concede to the other.

I know from seeing many x-ray films

of the thoracic and lumbar spine that fractures on either side of the thoracolumbar junction are common. One set of vertebral bodies and their processes are relatively fixed by the ribs; the others are not. So there is a fulcrum here, and such a pivot point markedly increases the forces exerted on the vertebrae at this junction. It is difficult to predict which side will break more often. It probably depends on the nature of the force: tension, compression, shearing, etc.

I think the same situation is present in the costo-chondral junction; the rib is more fixed, while the cartilage is more movable. And I think that a fulcrum is present here also.

The patient who brought up this matter was 38 years of age; so the costal cartilage was more movable. No blunt or sharp trauma had been delivered to the chest wall.

I think some of these "osteochondritides" can be considered fresh, fine cracks or fractures - at or next to the plane where one kind of tissue blends into another. - Richard J. Noveroske, M.D., Newburgh

Here and There...

Dr. Wymond B. Wilson of Mentone has been re-elected treasurer of the Flying Physicians Association; Dr. Sidney R. Goldstone of Munster is serving a two-year term as an FPA director.

Dr. Frederick M. Kelvin of Indianapolis was a guest speaker at the 11th Annual Leeds Gastroenterology Course for Radiologists, held recently in Leeds, England.

Dr. H.C. Moss, an Indianapolis general surgeon, has announced that he retired from practice Sept. 30.

Dr. S. Gopal Raju of Marion attended the International Conference on Smoking Health in Tianjin, China, and presented a paper on "Dangers of Tobacco Products." Later, he was a guest speaker at the Kidwayi Memorial Institute of Oncology Center in Bangalore, India, and was interviewed on the Bangalore television network.

Locally, Dr. Raju has formed a Grant County Chapter of the National Federation of Parents for Drug-Free Youth; Mrs. Nancy Reagan is the Federation's honorary chair. Dr. Raju participates in TV programs regularly to increase public awareness of the problem.

Dr. Marianne Plascak has joined her father, Dr. Francis E. O'Brien, in family practice at his Rensselaer office.

Dr. Thomas E. Ludwig of Valparaiso discussed diabetes-related issues at a recent support group meeting at Porter Memorial Hospital for parents of diabetic children.

Dr. Larry G. Schachter, a general surgeon, has been named associate General Motors regional medical director-Anderson.

Dr. John E. Joyner, an Indianapolis neurological surgeon, has been installed as president of the National Medical Association.

Monthly Newsletter Offers Latest AIDS Information

AIDS Report is a new monthly newsletter dedicated to the distribution of significant information on Acquired Immune Deficiency Syndrome. It provides timely, important developments in the medical, social, economic, regulatory and political aspects of AIDS.

The newsletter's coverage includes research reports, products and services, the cost of AIDS in health care, social implications, what other AIDS publications are available, funding for AIDS, and federal and state regulations.

To subscribe (\$19 per year), write FNP Health Division, 155 Post Road East, Suite 6, POB 71, Westport, Conn. 06881. Dr. William C. VanNess of Summitville served in August as grand marshal of the Summitville Lions Club Parade.

Dr. Paul F. Bustion Jr., an Anderson neurologist, was guest speaker at the August meeting of the local Alzheimer's Disease Support Group.

Dr. Keven W. Dodt of Logansport was the guest speaker at a recent meeting of the local Choices in Aging Support Group.

Dr. St. John Lukemeyer, a 90-year-old Jasper physician who is in his 65th year of practice, was honored on a recent Sunday afternoon by about a thousand well-wishers on the occasion of having been named by Governor Orr as a Sagamore of the Wabash.

Dr. Marvin E. Vollmer of Indianapolis presented a public lecture on Sleep-Wake Disorders in August at Morgan County Memorial Hospital.

Dr. Jay R. Tuttle of Vincennes was guest speaker at a recent monthly meeting at Good Samaritan Hospital of "Families Facing Cancer."

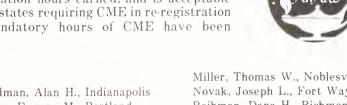
Dr. Glen A. Ramsdell, a Richmond pulmonary diseases specialist since 1951, has retired from practice; he and his wife Audree will make their retirement home in Dana Point, Calif.

Dr. Walter R. Vaughn, a Vincennes urological surgeon 32 years, has retired from practice; his son, Dr. William R. Vaughn, is succeeding him and will occupy the elder Vaughn's former office.

Physician Recognition Awards -



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Barton, Reginald R., Gary Behrend, Frank L., Valparaiso Billena, Raymundo L., Merrillville Boen, Bradley N., Muncie Cua, Rosita L., Indianapolis Doss, Jerome F., Kokomo Eastlund, Marvin E., Fort Wayne Eisenhut, Timothy M., Indianapolis

Friedman, Alan H., Indianapolis Gillum, Eugene M., Portland Hughes, Charles E., Beech Grove Kays, Larry P., Evansville Kruse, Stephen K., Kokomo McClain, Debra R., South Bend Michael, Isaac E., Indianapolis Miller, Thomas W., Noblesville Novak, Joseph L., Fort Wayne Reihman, Dana H., Richmond Ribaudo, Stephen R., South Bend Ringenberg, Rae E., Indianapolis Shoemaker, Robert E., Indianapolis Stanley, John R., Muncie Valentine, Russell P., Indianapolis

news notes.

New ISMA Members

Geoffrey M. Brittin, M.D., Indianapolis, anatomic pathology.

Candace C. Caldwell, M.D., Valparaiso, pediatrics.

Cleveland C. Cleary, M.D., Elkhart, family practice.

Andrew J. Cogbill, M.D., Indianapolis, anesthesiology.

William H. Cordell Jr., M.D., Indianapolis, emergency medicine.

Teresa V.K. Durbin, M.D., Indianapolis, otolaryngology.

Tony A. Findley, M.D., Evansville, diagnostic radiology.

Charles A. Fleming, M.D., Indianapolis, anesthesiology.

Stephen D. Glaser, M.D., Batesville, family practice.

Francis E. Healy, M.D., Huntingburg, obstetrics and gynecology.

Roger B. Hensley, M.D., Elkhart, psychiatry.

Lora J. Jones, M.D., Bluffton, internal medicine.

Mary Y. Klein, M.D., Valparaiso, oncology.

Blaine Lisner, M.D., Elkhart, neurology.

William F. Lustig, M.D., Columbus, family practice.

Martha J. Mechei, M.D., Frankfort, internal medicine.

Andres M. Pichardo, M.D., Batesville, anesthesiology.

Jeffrey I. Reider, M.D., Indianapolis, diagnostic radiology.

Donald A. Schwarten, M.D., Indianapolis, radiology.

Patricia H. Sharpley, M.D., Indianapolis, psychiatry.

Debut of 'The Human Side'

On the opposite page, you'll find the first installment of a new Dale Carnegie series entitled "The Human Side."

INDIANA MEDICINE is pleased to offer this new feature, prepared by Arthur R. Pell, Ph.D., a Dale Carnegie consultant. Barring unforeseen space problems, the feature will appear in each issue. As always, reader comments will be welcomed.

Thomas B. Stogdill, M.D., Bluffton, family practice.

Bruce J. Thoma, M.D., Valparaiso, orthopedic surgery.

Charles H. Tripple, M.D., Plainfield, family practice.

Eugene R. Trout, M.D., Knox, general surgery.

Rosalind H. Webb, M.D., Zionsville, diagnostic radiology.

Joan F. Zappia, M.D., Frankfort, pediatrics.

Residents:

Catherine L. Bain, M.D., Indianapolis, unspecified.

Kathleen N. Bales, M.D., Muncie, family practice.

Thomas E. Becker, M.D., Indianapolis, pediatrics.

Frank R. Burns Jr., M.D., Prospect, Ky., ophthalmology.

Marc W. Campbell, M.D., Carmel, unspecified.

Charles Carroll IV, M.D., Indianapolis, unspecified.

Ruth Y. Chu, M.D., Indianapolis, pediatrics.

Kathy S. Clark, M.D., Indianapolis, radiology.

Robert M. Colver, M.D., Indianapolis, endocrinology.

Timothy F. Cook, M.D., Indianapolis, obstetrics and gynecology.

Charles L. Elliott, M.D., Indianapolis, otolaryngology.

Blaine W. Farley, M.D., Evansville, family practice.

Lori Fuqua, M.D., Terre Haute, family practice.

M. Rebecca Haak, M.D., Danville, obstetrics and gynecology.

Eric G. Hall, M.D., Muncie, internal medicine.

Harry C. Harvey, M.D., Evansville, family practice.

George Hayao, M.D., Indianapolis, unspecified.

Richard Hehner, M.D., Indianapolis, unspecified.

Matthew W. Heller, M.D., Leo, family practice.

Bryan R. Ingersoll, M.D., Indianapolis, unspecified.

Ron Kearschner, M.D., Terre Haute, family practice.

Carrollton A. Keck, M.D., Indianapolis, unspecified.

Chris L. Loman, M.D., Shelbyville, family practice.

John F. Martig, M.D., Muncie, family practice.

Thomas M. Mattice, M.D., Indianapolis, anesthesiology.

James P. Mauck Jr., M.D., Elkhart, obstetrics and gynecology.

Stephen M. McCollam, M.D., Indianapolis, unspecified.

Paul K. Metzger, M.D., Indianapolis, unspecified.

Maria E. Nyby-Moore, M.D., Indianapolis, pediatrics.

Stephen J. O'Connel, M.D., Indianapolis, unspecified.

James T. Patrick, M.D., Indianapolis, unspecified.

Bryan K. Perkins, M.D., Indianapolis, family practice.

Marianne O. Plascak, M.D., Rensselaer, family practice.

John D. Rau, M.D., Indianapolis, pediatrics.

Bruce Robbins, M.D., Indianapolis, neurology.

Francisco N. Rodriguez, M.D., Indianapolis, general surgery.

Daniel Rudzinski, M.D., Indianapolis, anesthesiology.

Gary D. Shipley, M.D., Vincennes, general surgery.

Karen Shirrell, M.D., Indianapolis, unspecified.

William L. Shirrell, M.D., Indianapolis, urological surgery.

David B. Smith, M.D., Indianapolis, unspecified.

Sheila D. Smith, M.D., Muncie, family practice.

Pravina Somani, M.D., Carmel, unspecified.

Gust T. Spenos, M.D., Indianapolis, neurology.

Robert W. Stevenson, M.D., Muncie, internal medicine.

David Vander Lugt, M.D., South Bend, family practice.

William R. Vaughn, M.D., Vincennes, urological surgery.

Paul L. Walton, M.D., Franklin, ophthalmology.

Dean Yaussy, M.D., Terre Haute, family practice.



Delegate Without Fear

by Arthur R. Pell, Ph.D.

Consultant, Dale Carnegie & Associates, Inc.

In order for most supervisors or managers to accomplish all their activities, it is essential that they delegate some of their work to subordinates. Yet many managers are afraid to delegate

Paul's fear is that, if a subordinate does too good a job, he or she will be a threat to him. "If the boss sees that one of my people can do what I can do, my job may be in jeopardy," Filen's fear is more common. "If my subordinate messes up the assignment, I will be the one held responsible."

Building self-confidence.

Paul's problem is a lack of self-confidence. Although there have been situations where a manager has been replaced by a lower salaried subordinate, it usually has not been primarily due to this type of situation. As a matter of fact, the opposite is more usual. Most companies consider how effectively managers build up the capabilities of their people in evaluating their management skills.

By becoming as prolicient as he can in bis job. Paul will earn the respect of his supervisors and, because be knows he is good at his work, will build up bis own self-confidence. By making his people more effective in their work, he will be able to accomplish more in those aspects of the job that are of greater importance than those be has delegated to his subordinates.

I flen's problem is different. All managers are held accountable for the work of their subordinates. In order for her to be assured that the work she has delegated to others is done correctly and on schedule, she should follow the five elements of good delegation.

The delegatee must be capable of doing the job.

A manager should know the abilities of each of his or her people. Fo delegate an assignment to one who is not able to do it properly dooms it to lailure. If you do not have anybody who is capable, you have no choice but to do it yourself.

If this should be the case, your highest priority should be to train somebody to be able to handle this, so that the next time there is a need to delegate, you have a capable person for the assignment

What is delegated should be communicated effectively.

In order that the assignment is communicated properly, it must meet two criteria:

(1) It must be understood. This appears to be self-evident, but it isn't. You give detailed instructions to a subordinate. When completed, what is your inevitable question? "Do vou understand" What is the inevitable answer? "Sure." Why did that person say Sure? Perhaps the person really did understand, or perhaps she thought she understood but really didn't or perhaps he didn't understand at all, but was too embarrased to tell you.

Instead of asking "Do you understand" which reafly gives httle feedback, say "Tell me what you are going to do." The response to this will give you more meaningful feedback. If it is demonstrable, ask for a demonstration: "Show me bow you will enter this data into the computer"

(2) Not only must the instruction be understood, it must be accepted by the subordinate. You give a project to Marlene with the instruction that it must be completed by 3:30 this afternoon. Marlene looks at the amount or work required and says to berself: "No way." There's not much of a chance you will have it by 3:30. In order to gain her acceptance, tell her wby it is important and

ask her when she can complete at By bringing Marlene into the picture, to obtain ber commitment to complete the project when needed

Set control points.

This is your guarantee that the assignment will be performed correctly and on time. Control points are set at places where you can check the progress of the assignment and if anything has gone wrong, it can be corrected before it goes too far.

Control points are not surprise inspections. The subordinate knows when they will occur and what is expected at that point. You give Ted an assignment on Monday that must be completed by Friday. You tell Ted. "We will meet tomorrow at 4 PM to discuss the project. By that time you should have completed Parts A and B." If at that time you uncover errors, they can be corrected hefore Ted continues. Another advantage of control points is that if Ted realizes at 11 AM that be will not be able to complete Part B by the 4 PM control point, he can ask for help early enough to keep the project from falling behind schedule.

Give the delegatee the tools to get the job done.

In Martha's company, computer time is always at a premium When she delegated a project to one of her people, she neglected to arrange for computer time. As a result the entire project hogged down. Martha had the responsibility to assure that her subordinate had everything needed to do the job. By failing to do so, she doomed the project to failure.

Another type of "tool" the subordinate should be given is the authority needed to accomplish the mission. Martin was instructed to meet a tight deadline on the project. To do this it was necessary to work overtime, but Martin was not given the authority to order overtime work. This delayed completion of the project and resulted in missing the deadline.

When you delegate, you do not abdicate.

Managers should be available to help their people if needed When Doug assigned a new project to Andrea, be told her "I'm here to help you. It you have any problems, don't bestate to bring them to me." Andrea took this literally and instead of trying to deal with her problems, she brought them to Doug. This not only took an inordinate amount of Doug's time, but did not help develop Andrea's skills.

The next time Doug delegated a project to one of his people, he again noted his availability to belp them, but added "Bring me your problems, but bring with them a suggested solution." This encouraged them to think about the situation and come to their own conclusions. Doug would rather have them ask him. "Do you think this will work?" rather than "What should I do?"

By following these five elements of good delegation, you will accomplish more yourself because your people will be doing those things which are more suited for suhordinates to do, freeing you for more significant work. You will also be accomplishing one of the most important roles of a manager—building up the capabilities of your staff. Delegation is one of the best means of giving people the experience so important to their own development.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530.

COMMERCIAL ANNOUNCEMENTS_

INDIANA - PSYCHIATRIST (Board Certified/Eligible). The Psychiatry Svc at the VA Lakeside Medical Center, Chicago, IL, has openings in the Outpatient Division for clinicians to work in its new Adam Benjamin Jr. Mental Health Clinic in Crown Point, Indiana, Candidates should have a strong background in both dynamic psychotherapy and pharmacotherapy as well as interest in teaching and research. The position will carry a clinical training appointment at the Northwestern University Medical School in Chicago, Illinois. Inquiries and CVs with references should be directed to Lee Schwartz, M.D., Chief, Psychiatry Service (116A), V.A. Lakeside Medical Center, 333 E. Huron, Chicago, IL 60611-(312) 943-6600, x389

SEEKING DIRECTOR for industrial medicine clinic and emergency department based in moderate volume hospital in northwestern Indiana. Attractive compensation and malpractice insurance provided. Benefit package available. Contact Emergency Consultants, Inc., 2240 South Airport Road, Room 20, Traverse City, MI 49684; 1-800-253-1795 or in Michigan 1-800-632-3496.

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INDIANA EMERGENCY MEDICINE: Full-time positions, including a directorship, are currently available at client hospitals in Crawfordsville and Dyer, Indiana. Low to moderate volume ED's. Excellent medical and nursing staff support. Guaranteed rate of reimbursement, occurrence malpractice insurance coverage, CME allowance. Directors also receive family health benefits. For additional information on our Indiana opportunities, contact Bill Salmo, Spectrum Emergency Care, P.O. Box 27352, St. Louis, MO 63141—1-800-325-3982.

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GENERAL SURGEON: Recent medical retirement leaves opening for fourth surgeon to join three other Board-certified surgeons practicing general, thoracic and vascular surgery. Located in north central Indiana. Interest in endoscopy and colorectal surgery desirable. Send resume to 10540 Cermak Road, West Chester, IL 60153.

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EMERGENCY MEDICINE POSITION AVAILABLE: Excellent opportunity for experienced emergency physician to join career emergency group practicing in northwestern Indiana, near Chicago. If you have over 4,000 hours experience, please contact Debbie Carsky at (312) 327-0777.

PEDIATRICS: Southeastern Wisconsin. Large multi-specialty group located near Milwaukee is seeking a fourth BE/BC pediatrician. Competitive salary, excellent fringe benefits. Address inquiries and CV to Administrator, P.O. Box 427, Menomonee Falls, Wisconsin 53051.

Physician Placement Service

The Indiana State Medical Association operates a Physician Placement Service to help physicians and residents locate practice opportunities. For details, write: Physician Placement Coordinator, Indiana State Medical Association, 3935 N. Meridian St., Indianapolis, Indiana. 46208, or call (800) 382-1721 / (317) 925-7545.

OCEAN-REEF CLUB, Key Largo, Florida Keys. Long-term lease (Jan., Feb. or March), 2-bedroom waterfront condo. Full club facilities, tennis, diving, fishing. Ocean Reef is a complete resort featuring restaurants, shopping, 3 golf courses. Please reply: Sheila, Charles H. Bechert, M.D., 4875 N.E. 20th Terrace, Fort Lauderdale, Florida 33308.

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See the difference in the first week'

- Sleep improvement in 74% of patients after first h.s. dose²
- Significantly faster relief-62% of total four-week improvement evident in first week versus 44% with amitriptyline alone¹
- **Dramatic first-week reduction** in somatic complaints²

% Reduction in Somatic Symptoms²

Vamiting	Nausea	Headache	Anarexia	Constipation		
Reduced 90%	Reduced 86%	Reduced 72%	Reduced 62%	Reduced 60%		

Only 1/3 the dropout rate due to side effects of amitriptyline alone, although the incidence of side effects is similar

Caution patients about the combined effects of Limbitrol with alcohol ar other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.



Protect your decision. Write "Do not substitute"

In moderate depression and anxiety

Each tablet contains 5 mg chlardiazepoxide and 12.5 mg amitriptyline (os the hydrochloride salt)



Each tablet cantains 10 mg chlardiazepaxide and

25 mg amitriptyline (as the hydrachlaride salt)



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References: 1. Feighner JP, et al. Psychophormocology 61 217-225, Mor 22, 1979 2. Data on tile, Hoffmonn-La Roche Inc., Nutley, NJ

Limbitrol*

Tranquilizer-Antidenressant

Before prescribing, please consult complete product information, a summary of which follows: Indications: Relief of moderate to severe depression associated with moderate to severe anxiety Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deoths have occurred with concomitant use, then initiate cautiously, graduolly increasing dosage until optimal response is achieved. Contraindicated

during ocute recovery phose following myocardial inforction

Wornings: Use with great care in patients with history of urinory retention or ongle-closure gloucoma Severe constipation may occur in potients toking tricyclic antidepressonts and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arthythimios, sinus lachycordia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardiol infarction and stroke reported with use of this closs of drugs.) Caution patients about possible combined. effects with olcohol and other CNS depressonts and against hazardous occupations requiring complete mental alertness (e.g. operating mochinery, driving)

Usage in Pregnancy: Use of minor tronquilizers during the first trimester should olmost always be availed because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; odvise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use coulion in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrowal symptoms tollowing discontinuation of either component alone have been reported. (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawat for chlordiazepoxide)

Precoulting: Use with country in children with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renot or hepotic function. Because of the possibility of suicide in depressed patients, do not permit easy occess to large quantities in these potients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guonethidine or similar onlinyperlensives. When tricyclic onlidepres sants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady state concentrations of the tricyclic drugs. Concomitant use of Limbiltol with other psychotropic drugs has not been evaluated, sedative effect may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Wornings for precoulions about pregnancy. Limbifrof should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smollest effective dosoge to preclude otoxio, oversedation, confusion or onticholinergic effects Adverse Reactions: Most trequently reported ore those associated with either component alone drowsiness, dry mouth, conslipation, blurred vision, dizziness and blooting. Less frequently occurring

reactions include vivid dreams, impotence, fremor, confusion and nosal congestian. Many depressive symptoms including anorexia, tatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, joundice and hepotic dystunction have been observed rarely

The following list includes adverse reactions not reported with Limbitrol but requiring consideration. because they have been reported with one or both components or closely related drugs Cardiovosculor Hypotension, hypertension, tachycardia, palpitations, myocardiol inforction arrhythmias, heart block, stroke

Psychiatric Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomonia and increased or decreased libido

Neurologic Incoordination, atoxio, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns

Anlicholinergic Disturbance of accommodation, paralytic ileus, urinary retention dilatation of urinary Allergic Skin rash, urticaria, pholosensitization, edema of face and fongue, prurifus

Hemotologic Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocy topenia

Gastrointestinol Nausea, epigastric distress, vomiting, anorexio, stomatitis, peculiar taste, diarrhea,

Endocrine Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the temale, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion

Other Headache weight gain or loss, increased perspiration, urinary frequency mydriasis, joundice alopecia, parotid swelling

Overdosage: Immediately hospitalize patient suspected of having taken on overdose. Treatment is symptomatic and supportive TV administration of 1 to 3 mg physostigmine saticylate has been reparted to reverse the symptoms of amitriptyline poisoning. See complete product information for monitestation and treatment

Dosage: Individualize according to symptom severity and potient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime Single $h\,s\,$ dose may suffice for some potients. Lower dosoges are recommended for the elderly Limbitrol DS (double strength) Tablets, initial dosage of three or four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol Tablets, initial dasage of three ar faur tablets daily in divided doses, for patients who do not tolerate higher doses

How Supplied: Double strength (DS) Toblets, white, film-cooled each containing 10 mg chlordiaze-poxide and 25 mg amitriptyline (as the hydrochloride salt), and Toblets blue, film-coated each containing 5 mg chlordiazepoxide and 12 5 mg amitriptyline (os the hydrochloride salt). Available in boffles at 100 and 500, Tel-E-Dose™ packages at 100, Prescription Paks at 50



The rewards of Limbitrol tou're both smiling again

See the difference in the first week'

In depressed and anxious patients, you can see the difference sooner—62% of total four-week improvement achieved in the first week with Limbitrol versus 44% with amitriptyline.1

In moderate depression and anxiety

Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)

tablet contains 10 mg chlordiazepoxide and g amitriptyline (as the hydrochloride salt)



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ABOUT THE COVER

To date, more than 6,800 patients have been airlifted by two Indiana hospital aeromedical services - Life Line in In dianapolis and LifeFlight in Evansville This month's Critical Care Medicine article examines the "Indications and Preparation for Aeromedical Transport." - COVER ART BY BRENDA KESTER, MEDICAL MEDIA PRODUCTIONS METHODIST HOSPITAL OF INDIANA

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This is the first installment of Indiana Medicine's attempt to provide readers with fresh news about state and national medical issues. ISMA members will continue to receive special mailings on "hot" issues. For more information on these or other legislative matters, please contact the ISMA Dept. of Government Relations--1-800-382-1721 or 317-925-7545.

Medicare premiums paid by beneficiaries for Part B coverage will increase 38.5% under a Reagan Administration proposal...cost of physician services are being blamed.

The proposed increase, largest in Medicare's history, would raise monthly

premiums from \$17.90 to \$24.80.

Dr. Joseph Boyle, a past AMA president, considers the increase in a guest editorial in this issue of Indiana Medicine (p 1098).

The Physician Dispensing Bill is still in limbo...full House hasn't taken up HR 2168 (Wyden)--that's the one intended to prohibit most physician dispensing of drugs for profit.

The AMA has been ordered by a U.S. District judge to notify its members that they are free to work with chiropractors if they believe it to be in the best interest of the patient. The court order ends 10 years of litigation that started with a suit filed by four chiropractors charging that the AMA and 10 other medical groups conspired against their profession to violate the antitrust statutes. The injunctive order requires that the AMA not restrict "the freedom of any AMA member or any institution or hospital to make an individual decision as to whether or not that AMA member. institution or hospital shall professionally associate with a chiropractic institution."

Health Care Financing Administration plans...

1. HCFA will create a Medicare Part B Administrative Law Judge Bureau to handle physician and beneficiary appeals. 75% of the appeals will be by telephone.

handle physician and beneficiary appeals. 75% of the appeals will be by telephone.

2. HCFA will release results next month of its mortality data survey of hospitals that care for Medicare patients. They'll look at Medicare admissions in 1986 and how many patients died within 30 days of admission.

A compromise is likely on the catastrophic health bill in the Senate. The limit on out-of-pocket costs may be raised from \$1,700 to \$1,800; this limit will be tied to annual increases in medical prices instead of the CPI. Prescription drug coverage will be added to the bill, with the coverage phased in over three years.

This is not the final version of the bill--just a compromise plan to win White

House support.

Among changes that went into effect Oct. 1 as a result of the Omnibus Budget Reconciliation Act of 1986 (OBRA)...

- 1. Hospitals must <u>identify patients who could donate transplantable organs.</u>

 About 97% of the nation's 6,800 private and public hospitals participate in Medicare or Medicaid, or both.
- 2. Patients must now be given written notice when elective surgery procedures will cost \$500 or more and assignment will not be accepted; the written agreement must refer to specific services, must be obtained before the service is provided, and must be kept in the patient's record. HCFA says carrier instructions are finalized; although it's effective now, sanctions and compliance won't start until Jan. 1.
- 3. Under certain circumstances, physicians will have to make <u>refunds to patients</u>; this will happen when non-participating physicians provide, on an unassigned basis, services later determined by Medicare to be "<u>medically</u> unnecessary."

4. The AMA's CPT-4 codes are now required by HCFA for billing of outpatient

Medicare services.

IN INDIANA...

A two-year moratorium on surrogate mother contracts has been recommended by the Family Law Subcommittee. During that time, the legislature would have to define state-approved methods for conceiving a child. The full committee will need to take action on the subcommittee's recommendation.

The Indiana Sunset Committee has voted NOT to recommend a formal committee vote on proposed legislation to increase the medical malpractice cap to \$200,000/\$600,000.

Professional liability rates have been increased. The Physicians Insurance Company of Indiana (PICI) implemented a new rate schedule Oct. 1. Although the actual increases vary by rate class, the overall increase is 14.4%.

Dieters may soon have to consider alternatives to amphetamines for weight loss. The ISMA Board of Trustees has approved a proposal to prohibit completely the prescribing and dispensing of all Schedule II. III and IV amphetamines for this purpose. The proposal, which has been sent to the Indiana Medical Licensing Board, is based on a recommendation contained in the final Indiana Prescription Abuse Data Synthesis (PADS) Report from the ISMA and twenty other organizations.

Growing concern about the spread of AIDS has prompted the state's Interim Study Committee on Public Health to consider legislation to require health care workers to wear gloves, etc., when dealing with blood products.

- Recommendations for prevention of HIV transmission in health care settings were published in the Sept. 11 and 18 issues of JAMA.

Recommendations are from the Centers for Disease Control.

MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



HE TERM "medical ethics" means different things to different people. To older folks it refers to the physician's conduct with regard to his patients and to his colleagues—the do's and don'ts of interpersonal behavior.

Technological progress, legal and societal changes, and the increase in number and kinds of medical dilemmas over the past 20 years has broadened the philosophical concept so that "medical ethics" now embraces a much wider scope.

Most physicians are aware of this change. What about their patients? To gain a practical insight into the layman's viewpoint I posed the following question: What is the primary ethics-related grievance of the present-day Indiana patient?

To find an answer to this question, I sent a letter last December to each of the state's county medical societies, inquiring as to the number and the nature of ethics-related patient complaints for 1986.

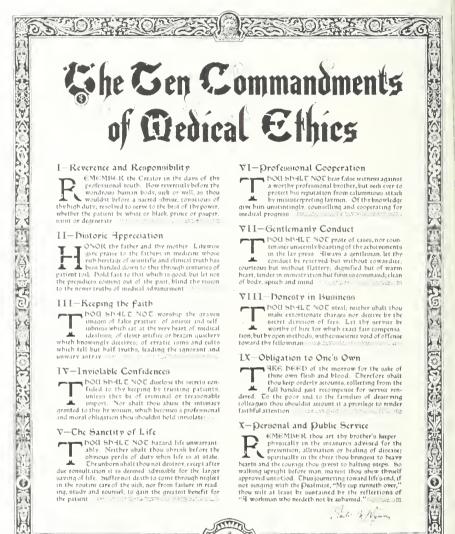
It was reassuring to learn that most county societies had received no complaint of any kind. One physician even reported that not only had his society received no complaint but that there had never ever been a malpractice suit filed in that county.

Most of the complaints for 1986 came from urban areas, with Marion, Lake and Allen Counties leading the rest.

The number of behavior-related and communication-related complaints were negligible. By far the greatest perceived abuse was in the fee-related category. A complaint alone, however, does not indicate an ethics violation. Most of these complaints, as I was informed by several societies, resulted from inadequate communication early-on in the doctor-patient relationship and could easily have been avoided.

My purpose in identifying the patient's primary ethics concern was to pursue the problem philosophically.

The philosophical basis of the physi-



cian's fee depends upon perspective. The average physician who views his profession in terms of continuing study and dedicated service may have a different concept from the average patient who is much more aware of cost than of the years of study, training and sacrifice on the part of the physician. A very caustic lay comment, for example, is found in the preface to

George Bernard Shaw's play, *The Doctor's Dilemma*:

"As to the honor and conscience of doctors, they have as much as any other class of men, no more and no less. And what other men have to pretend to be impartial where they have a strong pecuniary interest on one side."

CONTINUED ON PAGE 1065

A tradition of **excellence** earns confidence and trust.

A tradition began the day we first received a physician's prescription at the first Peoples in 1905...a tradition which has kept the pharmacy at the heart of every Peoples Drug store since then.

Today, the excellence and professionalism of Peoples pharmacists have earned the trust and confidence of your profession, as well as the trust and confidence of your patients whom we proudly serve.

You can be sure that the next prescription you write will be filled according to the same traditional standards of excellence as the millions preceding it.

Every Peoples has an unlisted phone that's reserved only for doctors and answered only by pharmacists. Please call your local store to obtain the number.



The American Academy of Ophthalmology has issued a public health alert about the danger of using salt tablets to prepare homemade saline solutions for rinsing, storing or cleaning contact lenses. Recent studies show improper use of homemade saline solutions by soft contact lens wearers leads to Acanthamoeba keratitis, a rare but dangerous corneal infection that can result in blindness. Commercially prepared solutions are sterile; homemade solutions may not be.

Colwell Systems, Inc. has consent forms for elective surgery written to comply with new Medicare regulations. These pre-printed, no carbon required, forms provide space to specify, in writing, the surgeon's estimated charge, estimated Medicare allowable charge and the difference between the two, as now required by Medicare in advance of elective operations involving charges over \$500.

Indoor air pollution is the natural consequence of modern construction and insulation technics. Exchange of indoor air with outdoor air used to be sufficient to prevent all but the most gross contaminants. Hunt Manufacturing has a variety of models of the Boston air purifier/ionizing air treatment systems which by filtration and electrostatic trapping are able to remove ultra-small particles.

The September 4, 1987 issue of *JAMA* reports on a new means of detecting acute human immunodeficiency virus (HIV) before HIV antibodies develop.

Burroughs Wellcome announces the peak season for pediculosis, better known as head lice. Also BW calls attention to two recently published studies (in Pediatric Infectious Disease Journal and Pediatric Dermatology) in which NixTM brand (permethrin) 1% creme rinse is reported as effective against head lice; in addition, it leaves the hair much easier to comb while removing the nits.



General Devices Company has a set of cabinet-mount platform/slides which are ideal for consoles, test equipment, graphic display terminals and other equipment that cannot be rack mounted. Smooth ball bearing sliding action makes it suitable for delicate instrumentation. Available in lengths from 10" to 30" and with weight-bearing capacity from 75 to 180 pounds depending on slide length.

Medical Arts Press is introducing a new wrinkle in sink faucets. The new NHR Automatic Faucet does not require manual turning-on-and-off. It operates with a built-in infrared sensor that turns the water on when hands are under the faucet and turns off when hands are withdrawn. The temperature of the water is set when the faucet is installed.

Colwell Systems, Inc. produces welcome brochures for the doctor's office. They acquaint new patients with office policies, hours, address and phone number together with the doctor's name and degree. There is an option of nine different covers, each designed to project a particular image for the practice. The copy may be standard or may be written by the doctor.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Abbott Laboratories has received FDA approval for marketing the first radio-immunoassay (RIA) for cancer antigen 125 (CA 125). CA 125 RIA is a blood test for patients diagnosed with ovarian cancer. Elevated CA 125 serum levels indicate the presence of residual ovarian cancer in patients who have received first-line therapy, such as surgery, chemotherapy or radiation. The test enables physicians to determine the future course of treatment, which may include a second-look operation.

Schering Pharmaceuticals announces a new antihypertensive to be marketed by Key Pharmaceuticals, which is now merged with Schering. The new product, NORMOZIDE® (labetalol HC1 and hydrochlorothiazide), adds the activity of a thiazide diuretic to the dual blood pressure lowering mechanisms of NORMODYNE® (labetalol HC1) for enhanced efficacy. Available in strengths of 100 mg, 200 mg, and 300 mg of labetalol with 25 mg of hydrochlorothiazide, the medication is indicated for the control of hypertension.

Abbott Laboratories announces FDA approval for marketing Hytrin (terazosin), the first once-a-day drug in the alpha-1 blocker category. The new drug will be marketed jointly with Burroughs Wellcome Company. It will compete in the anti-hypertensive market with beta blockers, ACE inhibitors and calcium channel blockers.

Forest Pharmaceuticals has an improved aerosol inhaler for use by patients, especially the very young and the very old, who have difficulty in coordinating the discharge from the inhaler with their inhaling. A device called Aerochamber® is interposed between the inhaler and the mouth piece. The Aerochamber acts as a holding chamber. The patient may release aerosol from the inhaler into the chamber and then within a few seconds may inhale deeply. The Aerochamber may be acquired without a prescription.

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"We've found that Medic saves us many hours of paperwork every week. A couple of hours of work is down to 15 minutes."

Jeanine Mielke, office manager, Hahn, Hoard & Taub, M.D., P.A., Boca Raton, Florida

This urology practice uses Medic Computer Systems to electronically transmit many Medicare claims every day. A job that once took a large part of the business day is now done in minutes. And that's only one of the ways that Medic saves time on paperwork.

"It's helped our cash flow tremendously."

Mike Griga, general manager of Mayfield Neurological Institute, Cincinnati, Ohio

Changing the billing system from once a month to once a week is just one way Medic has improved the bottom line of the nation's largest neurosurgery group.

"Any time we've had a problem, Medic has been immediately responsive. They bend over backwards to suit their customers. It's the best money we have ever spent."

Wynne Vaughan, office manager, Capital Pediatric and Adolescent Center, P.A., Raleigh, North Carolina

We'll do whatever it takes to keep your system working. Day or night. We have a toll-free STAT line to handle questions and problems. And there's a STAT PLUS line from our support center to your system for software updates and diagnoses.

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Nancy Psimas, office coordinator, Portsmouth Orthopaedic Associates, Portsmouth, Virginia

The Medic system can ease the process of sending statements and reduce the number of uncollected bills. Plus, our easy-to-understand printouts help you keep better track of your financial condition.

"Medic's extensive training program for our staff made it easy to introduce the system. We recommend it highly." Tessa Horne, administrator, Morgantown Ear, Nose & Throat Clinic, Morgantown, West Virginia

"We love the training program. And the updates they do really help," Ms. Horne said. When a practice brings in over 200 patients a day as this one does, the business office has to run smoothly. "Medic does everything we need. It's great."

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BRIEF SUMMARY

CONTRAINDICATIONS

here are no known contraindications to the use of succalfate

PRECAUTIONS

Duodenal ulcer is a chronic, lecurrent disease. While short-term treatment with sucraffate can result in complete healing of the ulcer a successful course of treatment with sucraffate should not be expected to alter the post healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous infirm stration of CARAFATE with tetracycline, phenytoin or cimetidine will result in a statistically significant reduction in the bioavailability of these arents. This interaction appears to be nonsystemic in origin, presumably to ultring from these agents being bound by CARAFATE in the gastrointesting tract. The bioavailability of these agents may be restored simply by the parating the administration of these agents from that of CARAFATE by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug related tumorigenicity was found in chronic oral toxicity studies of 24 months iduration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in minerals, and rabbits at closes up to 50 times the human close, and have reversed no explained at harm to the fetus due to sucrafate. There are, however no adequate and who controlled studies in pregnant women. Because an maliteproduct on studies are not always predictive of human response this drig. Inordid be used during pregnancy on yif clearly needed.

response this drug, horid be used during pregnancy on yild dearly needed.

Nursing Mothers: this not known whether this drug is exircted in human mick, caution to make the acise many drugs are excreted in human mick, caution and if the exemped when such alter is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been clabished.

ADVERSE REACTIONS

A trenscream instructor affate in cinical trials were minor and only rarelyted to discontinuation of the drug in studies involving over 2,500 patients, adverse effects were reported in 121–4,7%. Constipation was the most inequent compraint 2,2% Other adverse effects, reported in no more than one of every 350 patients, were disched, nausea, gastric discomfort, indigistion dry mouth, as a printus back pain disziness sieepiness, and vertigo

DOSAGE AND ADMINISTRATION

There ominends if it is to each sage for dipodenature is 1 gm four times a day on an empty is than his

Antal dismay be presided as needed to relief of pain but should not the pain within one half hour before or after surralfate.

Which having with a parfate may obtain during the tirst week or two alarment should be continued for 4 to 3 weeks unioss healing has been demonstrated by xia, one to your princation.

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Specialized ulcer therapy

When advancing age signals reduced acid secretion



If your duodenal ulcer patient is over 55, decreased mucosal resistance is more likely to cause an ulcer than hypersecretion of acid-pepsin. A tendency toward lower acid secretion with advancing age has been shown.²³

Declining gastric secretion and age³



CARAFATE® (sucralfate/Marion) makes sense as initial ulcer therapy for the elderly. Carafate provides ulcer healing rates comparable to H₂ antagonists without the risk of systemic side effects or drug interactions—an important benefit for older patients.

The unique, nonsystemic action of Carafate enhances the body's own ulcer healing ability, strengthening the mucosal structure as it protects damaged tissue from further injury.

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There's never been a better time for her



nd PREMARIN®



Proven benefits beyond relief of vasomotor symptoms

No other estrogen proven effective for osteoporosis

Only conjugated estrogens tablets have established efficacy in both osteoporosis¹ and vasomotor symptoms* at 0.625 mg/day. No other estrogen, oral or transdermal, has established clinical evidence or minimum effective dose in both indications.

No estrogen proven safer

PREMARIN is the most extensively tested estrogen, with an unsurpassed record of long-term safety.

And clinical evidence shows a significantly reduced risk of endometrial hyperplasia when cycled with a progestin.²

PREMARIN (conjugated estrogens tablets)

Most trusted for more reasons

*PREMARIN is indicated for moderate-to-severe vasomotor symptoms

Please see following page for brief summary of prescribing information.

For moderate-to-severe vasomotor symptoms and for osteoporosis

PREMARIN (conjugated estrogens tablets)









 $0.9 \, \mathrm{mg}$

 $1.25 \, \mathrm{mg}$

The appearance of these tablets is a trademark of Averst Laboratories

BRIEF SUMMARY FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE

PREMARIN* Brand of conjugated estrogens tablets, USP PREMARIN* Brand of conjugated estrogens Vaginal Cream, in a nonliquefying base

1 ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA Inter endependent case-controlled studies have reported an increased risk of endometrial cancer in posimenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the tapidly expanding use of estrogens during the last decade. The three case-controlled studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of three indings, when estrogens are used for the treatment of menopausal symptoms, the towest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated the patient should be reassessed on at least a semi-annual basis to determine the need for continued therapy. Although the evidence must be considered pretiminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration, it therefore appears prudent to utilize such a regimen. Close clinical surveitlance of all women taking estrogens is important in all cases of undiagnosed persistent or recurring abnormal vaginal bleeding estrogens are more or less hazardous than 'synthetic' estrogens at equi-estrogenic doses. 2 ESTROGENS SHOULD NOT BE USES OURLING PREGNANCY.

The use of temale sex horimones, both estrogens and progestogens, during early pregnancy may serrously damage the offispring if has been shown that temales exposed in utero to dethylistiblestrof a nonsteorolly being in it is not known whether they are precursors of m

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively them natural sources blended to represent the average composition of material derived from pregnant mares urine. It contains a situation and 17-a-distribution and 17-a-distribution to gether with smaller amounts of 17-a-estration equilining and 17-a-distribution a

estrogens per gram IMDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets: USP). Moderate-to-severe vasomotor symptoms associated with the menopause (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and likey should not be used to treat such conditions.) Osteoporosis (abnormally low bone mass). Altophic vaginitis: Kraurosis vulvae Female castration. PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and

PREMABIN Iconjugated estrogens of Agyanat Cream is indicated in the freatment of attophic vaginities and Fraurosis vulvae
PREMABIN IConjugated estrogens of Agyanat Cream is indicated in the freatment of attophic vaginities and Fraurosis vulvae
PREMABIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE OURING PREGNANCY ANO ITS
USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXEO WARNING)
Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal implication of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women for ment with any of the following conditions. I known or suspected cancer of the breast except in appropriately selected patients being leated for metastatic disease. 2 known or suspected abnormal genital bleeding 5. Active thromboembolic disorders 6. A past history of thromboembolic disorders. 6. A past history of thromboembolic disorders associated with previous efforts are cerent large case-controlled study indicated no increase in risk of breast cancer in postmenopausal estrogens. Warning 14 devent of the provided provided and the provided p

women. A recent study has reported a 2- to 3-total increase in the risk of surgically confirmed gallbladder disease in women rices wing postmenopausal estrogens. Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to freat prostatic or breast cancer or postpartum breast engorgement. If has been shown that there is an increased risk of thrombosis men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophiebitis, pulmonary embolism stroke, and empocardial infarction. Cases of tetnial thrombosis, menterier (thrombopiss, and optic neutrits have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. It leasable estrogen should be discontinued at least 4 weeks below surgery of the type associated with an increased risk of postsurgery thromboembolism, or during periods of prolonged mimobitization. Estrogens should not be used in persons with active thrombophiebitis, thromboembolic distribution in patients with cerebral vascular or coronary artery disease large doses (5 mg conjugates) distribution in patients with cerebral vascular or coronary artery disease large doses (5 mg conjugates) distribution in patients with cerebral vascular or coronary artery disease large doses (5 mg conjugates) distribution and thromboembolic and electric should be considered a clear risk

For atrophic vaginitis

PREMARIN' (conjugated estrogens)

Vaginal Cream

 $0.625 \,\mathrm{mg/g}$



Benign hepatic adenomas should be considered in estrogen users having abdominat pain and tenderne, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estroger containing oral contraceptives Increased blood pressure may occur with use of estrogens in the menopause a blood pressure should be monitored with estrogen use. A worsening of glucose folerance has been observed patients on estrogen-containing oral contraceptives. For this reason, diabetic patients, should be careful observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone melastases. PRECAUTIONS: Physical examination and a complete medical and tamily history should be taken prior to intitation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organism should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer time eyear without another physical examination being performed. Conditions influenced by fluid retention, sur as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients mastodynia, etc. Protonged administration of unopposed estrogen therapy has been reported to increase them: of endometrial hyperplasia in some patients. Oral confluence provides a patient of mental depression. Patients with an increase him incidence of mental depression. Patients with an intorey of depression should be carefully observed Pre-existing uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen, if medication should be discontinued white the cause is investigated. Estrogens should be advised of estrogen in young patients in whom bone growth is not yet complete. If concomitant progestin therapy is used, potential six may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen.

a Increased sullobromophthalein retention
b Increased prothrombin and tactors VII, VIII, IX and X decreased antithrombin 3, increased norepinephrine

induced platetet aggregability

induced platelet aggregability c Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, a measured by PBI, T₃ by column, or T₄ by radioimmunoassay. Free T₃ resin uptake is decreased, reflecting the elevated TBG, tree T₄ concentration is unaltered d. Impaired glucose tolerance e. Decreased pregnanediot excretion.

1. Reduced response to metryapone test.

Reduced response to melyrapone test
g Reduced serum Intiglyceride and phospholipid concentration
h Increased serum Intiglyceride and phospholipid concentration
As a general principle, the administration of any drug to nursing mothers should be done only when clearly
necessary since many drugs are excreted in human milk
Long-term, continuous administration of natural and synthetic estrogens in certain animal species increase;
the frequency of carcinomas of the breast, cervix vagina, and fiver However, in a recent, large case-controller
study nt postmenopausal women there was no increase in risk of breast cancer with use of conjugated estrogens
AOVERSE REACTIONS: The following have been reported with estrogenic therapy including oral cortraceptives breakthrough bleeding, spotting, change in mensitual flow dysmenorrhea, premenstrual-like
syndrome, amenorrhea during and after freatment, increase in size of uterine thromyomata, vaginal candidiase,
schange in cervical erostion and in degree of cervical secretion, cystistis-like syndrome, tenderness, enlargement
secretion (of breasts), nausea vomiting abdominal cramps, bloating, cholestatic quandice, chloasma on
melasma which may persist when drug is discontinued erythema multiforme, erythema nodosum, moorthagic
eruphion, toss of scalp hair, hirsutism, steepening of corneal curvature, intolerance to contact lenses, headache
migraine, dizziness, mental depression, chorea, increase or decrease in weight, reduced carbohydrate folerance,
aggravation of porphyria, edema, changes in libido.

aggravation of porphyria, edema, changes in libido ACUTE OVENDOSAGE: May cause nausea, and withdrawal bleeding may occur in females DOSAGE AND ADMINISTRATION:

DOSAGE AND ADMINISTRATION:

PREMARIN* Brand of conjugated estrogens tablets, USP

1. Given cyclically for short-term use only. For treatment of moderate-to-severe vasomotor symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 mg to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible Administration should be cyclic (eg. three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. Given cyclically. Osteoporosis: Female castration. Osteoporosis.—0.625 mg daily. Administration should be cyclic. (eg., three weeks on and one week off). Female castration.—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patien!. For maintenance, adjust dosage to lowest level that will provide.

Patients with an infact uterus should be monitored for signs of endometrial cancer and appropriate meas ken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN - Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued as

promptly as possible

Administration should be cyclic (eg. three weeks on and one week off)

Attempts to discontinue or taper medication should be made at three- to six-month intervals

Usual dosage range 2 g to 4 g daily, intravaginally, depending on the severity of the condition

Treated patients with an infact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurring normal vaginat bleeding

Helerences:

1. Lindsay R. Hart OM. Ctark OM. The minimum effective dose of estrogen for prevention of postmenopausal bone loss. Obset Gynecol 1984;63: 759-763. 2. Studd JWW. Thom MH. Paterson MEL, et al. The prevention and treatment of endometrial pathology in postmenopausal women receiving exogenous estrogens, in Pasetto N. Paoletti. R. Ambrus JL. (eds.). The Menopause and Postmenopause. Lancaster England, MTP Press Ltd. 1980.

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To obtain Category 1 credit for this month's article, complete the quiz on page 1113.



Perspectives in Otitis Media

GEORGE W. HICKS, M.D. J. WILLIAM WRIGHT III, M.D. Indianapolis SYMPOSIUM on "Perspectives in Otitis Media," sponsored by the Ear Institute of Indiana and Indiana University, was held in October 1986. Speakers from around the country brought a wider perspective to the problems surrounding otitis media with effusion (OME). This paper is based on the proceedings of that meeting.

OME is one of the most common diseases of childhood seen by the primary care physician. The amount of time, therapy, and money expended on this and related entities is staggering. Consider that:

- One in three of all office visits under the age of 5 years is for middle ear disease.
- Three of four of all follow-up visits are for middle ear disease.
- Middle ear disease is diagnosed in 10% of all well baby visits.
- 50% of all children have at least one episode of OME by age 1 year. That number rises to 75% by age 2.

Another way of looking at the problem is that one-third of children do not get OME, one-third have an occasional episode, and one-third have frequent episodes.

A few definitions are in order for uniformity of discussion. ²⁴ Acute otitis media (AOM) is a middle ear infection lasting up to three weeks. Subacute otitis media is an infection lasting three weeks to three months. Chronic otitis media is an infection lasting more than three months. Some confusion persists about this last entity, as chronic otitis media is also the term used to describe a chronic perforation of the eardrum or other middle ear structural disorder with or without infection being present.

Granted that OME is a major health, social and economic problem, what are some of the factors that bear on its occurrence?

Factors associated with increased incidence of OME:59

1) Birth weight less than 2.4 kg.

Correspondence: George W. Hicks, M.D., The Ear Institute of Indiana, 8103 Clearvista Parkway, Indianapolis, Ind. 46256.

- 2) Skull circumference lower than the 2.5 percentile had flat tympanograms indicative of middle ear abnormality.
- 3) Positive family history of ear infections.
- 4) Sex. Males have a 59-72% greater incidence than females.
- 5) Race. Eskimos and American Indians have a greater incidence than Caucasians. Caucasians have a higher incidence than blacks. This may be due to variation in eustachian tube anatomy.
- 6) Nasal Condition. The risk of OME increases 3-5 times with persistent nasal drainage. This is possibly due to chronic negative nasopharyngeal pressure.
- 7) Allergy. Atopic children have been shown to have need for more ventilation tube placements than nonatopic ones. Atopic children also have persistent OME at four times the rate of the general population and acute otitis media at twice the normal statistical rate. The presence of mucous membrane swelling, plus the inflammatory changes within the lumen of the eustachian tube, apparently reduce the ability of the tube to adequately perform its drainage and aeration function. Unfortunately, there have been no carefully controlled studies detailing the relationship of allergy to OME.
- 8) Congenital Deformities. Down's syndrome and cleft palate are among the more common of the craniofacial abnormalities associated with poor eustachian tube function and OME.
- 9) Infection. A child with one or more acute ear infections within the first year of life is twice as likely to suffer infections in subsequent years. Antecedent viral infections (respiratory syncitial, influenza A and B, and adenovirus) confer similarly increased risk.
- 10) Teething and dental caries increase the incidence of OME, probably due to inflammation of deep cervical nodes.
 - 11) Immunology. Although there

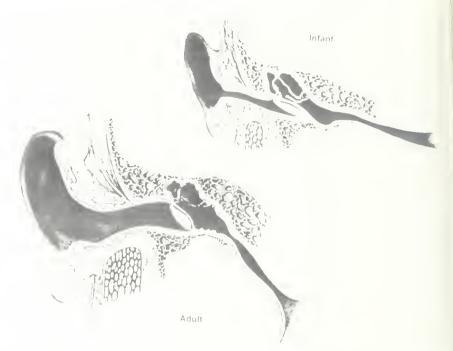


FIGURE 1: Eustachian tube anatomic variations with age. In infants the tube is shorter, relatively wider, and more horizontal; the tympanic membrane is thicker and more elastic. As a child grows, the eustachian tube doubles in length from approximately 18 mms at birth to about 36 mms as an adult.

have been no specific cause/effect relationships established, the presence of immuno-deficiency disorders is associated with an increase in episodes of OME.

- 12) Mesenchyme. The persistence of mesenchyme within the middle ear space has been shown by Takahara and Paparella to lead to a condition known as "silent otitis media."
- 13) Social-economic Status: "The running ear is the heritage of the poor." Crowding, poor nutrition, reduced compliance with medical therapy, poor hygiene, and inattention or unavailability of medical care have all been indicted in an increased incidence of OME.
- 14) Season. There is a peak incidence of OME from October to April.
- 15) Age. The most common periods in life for OME are age 6-24 months and 4-6 years.
- 16) Day Care Centers. Children placed in day care centers show an in-

- creased incidence of acute middle ear infections. The lowest infection rate is for children in the home. Intermediate rates are seen in family day care centers. The highest rates are in community day care centers.
- 17) Cigarette Smoke. Exposure to cigarette smoke leads to an increase in OME of 2.8 times normal. A higher incidence of negative middle ear pressure and eustachian tube dysfunction is seen with exposure to smoke. Studies have shown that if the mother smokes 15 cigarettes per day while pregnant, there will be an increased risk of OME. If both parents smoke, the risk of OME is increased threefold. If the child is exposed to smoking totaling greater than three packs per day, OME is four times normal.
- 18) Infant feeding position. Breast feeding gives limited protection against middle ear infection. Feeding in a recumbent or head-hanging position leads to eustachian tube reflux and

Eustachian Tube Function

The principle functions of the eustachian tube are ventilation, protection, and clearance (Figure 1). Of these, ventilation is important for healthy, middle ear mucosa. When ventilation is impaired, oxygen is absorbed, a negative middle ear pressure occurs, and the transudation of fluid results.

The eustachian tube prevents contaminated nasopharyngeal secretions from reaching the middle ear. When this function is compromised, bacteria can travel up the tube and cause recurrent otitis media.

The clearance of middle ear secretions occurs by means of mucociliary transport across the eustachian tube. Tube blockage inhibits this middle ear drainage. Eustachian tube obstruction may be extraluminal, intraluminal, or intramural. Extraluminal obstruction results from hypertrophied nasopharyngeal lymphoid tissue or tumor. Intraluminal obstruction is due to mucosal edema secondary to infection or allergy. Intramural obstruction is due to mechanical dysfunction of the tube caused by either abnormal muscle action or tube consistency and compliance.

infection.

19) Antibiotics. Incomplete antibiotic treatment of acute suppurative otitis media may block functional middle ear immune systems.

20) Tonsils, adenoids, and sinuses. External compression and blockage of the eustachian tube by enlarged adenoids can cause mucosal inflammation and edema with secondary otitis media. Bacterial infection in the sinuses, tonsils, or adenoids can enter the eustachian tube orifice and cause otitis media. Adenoidal obstruction of the posterior nasal channel can cause abnormal nasopharyngeal pressure with reflux of secretions into the middle ear.

Microbiology

The microbiology of middle ear infections has been changing in recent years. 10,11 Present studies indicate involvement of the following organisms:

0 0
Pneumococcus
Hemophilus influenza 20%
Branhamella catarrhalis23%
Streptococcus (Group A) 1%
Staphylococcus aureau 1%
No growth 25%

In the first six weeks of life the microbiology of middle ear infections consists of the following:¹²

Pneumococcus or

Η.	Infl	uenza							48%
E.	coli	and/o	r	K	lek	si	ella	sp.	20%
No	gro	wth.							32%

There is an increasing presence in recent years of B. catarrhalis, with up to 26.5% of cultures yielding this as the predominant organism in some studies. Also of increasing concern is the ability of certain organisms to be able to break the beta-lactam ring of penicillin. Among the organisms capable of doing this are S. aureus, H. influenzae, E. coli, and B. catarrhalis. There is an increasing resistance to ampicillin, especially by B. catarrhalis (77% resistance) and H. influenzae (24% resistance).

The incidence of viral OME is 4.4%, with respiratory syncytial virus the usual culprit.

The type of fluid (thin, thick, or gluelike) in patients with OME has no relationship to the type of bacteria present.

Diagnosis

Symptoms and signs are earache, pulling at the ear, irritability, hearing decrease, and otorrhea. Pneumatic otoscopy is required to make the diagnosis. Fever indicates acute infection.

Tympanometry is a useful test of middle ear function in patients older than 6 months. It will only differentiate AOM or OME from normal.

Why Treat Otitis Media?

Although AOM may subside spontaneously, various complications can result when infection persists. Among

these are chronic middle ear disease, intracranial complications (meningitis, abscess, hydrocephalus, lateral sinus thrombosis), facial paralysis, retraction pockets with cholesteatoma, and middle ear ossicular erosion.

Loss of hearing can cause speech and language impairments, behavior disturbances, and learning difficulties. Although not all clinicians attribute these sequelae to OME during infancy and childhood, it is an alarming situation if true, especially considering that, in animals, sensory deprivation leads to organic defects in the auditory pathways.

Medical Treatment (Table 1)

Antibiotics are used to treat otitis media because of their effect in helping to decrease complications and eradicate positive cultures. Treatment is continued for 10-14 days for best clinical effect and to prevent recurrence. Antibiotics of choice in decreasing order of effectiveness are:^{13,14}

- a) amoxicillin
- b) ampicillin (ineffective against beta-lactamase producers)
- c) cefaclor (expensive)
- d) erythromycin + sulfa combinations
- e) trimethoprim + sulfa combinations (Bactrim, Septra)
- f) amoxicillin/clavulanate potassium

Other measures which are helpful in medical treatment of middle ear infections:

a) Sleeping with the head elevated (reduces eustachian tube/middle ear congestion from lymphatic and venous engorgement)

b) Analgesics

Decongestants probably have no role in the therapy of otitis media.¹⁵ They may actually thicken secretions through their atropine-like effect. Some studies have shown beneficial effects from the use of steroids, but it is presently felt that their side effects and uncertain clinical efficacy preclude their routine use in otitis media.

Prophylactic administration of anti-

TABLE 1

Medical Treatment of Otitis Media with Effusion (OME)

Purposes: 1) Decrease complications

2) Correct positive cultures

Antibiotics of choice in decreasing order are:

a) amoxicillin

b) ampicillin (ineffective against beta-lactamase producers)

c) cefaclor (expensive) or augmentin (amoxicillin-potassium clavulanate)

d) erythromycin-sulfisoxazole

e) trimethoprim-sulfamethoxazole combinations

Other measures include: 1) Sleeping with head elevated

2) Analgesics

PROPHYLAXIS

Duration of 3 months to 1 year

INDICATIONS

a) Five attacks of acute otitis media within 12 months

b) Three episodes of acute otitis media in 6 months

c) Two episodes of acute otitis media before age 6 months

PROPHYLACTIC MEDICATIONS OF CHOICE AND DOSAGE

1) amoxicillin 20 mg/kg/day in 1 dose

2) ampicillin 20 mg/kg/day in 1 dose

3) sulfisoxazole 75 mg/kg/day in 2 doses

 trimethoprim-sulfamethoxazole 0.5 mg/kg/day (trimethoprim) per kg per day

biotics may be considered in selected cases. 16,17 As a general guide, if a patient has at least five attacks of AOM within a 12-month period, three episodes within a six-month period, or two episodes before the age of six months, prophylaxis may be indicated for a duration of three to 12 months. Medications of choice in descending order of effectiveness are:

a) amoxicillin 20mg/kg/day in a single dose

b) ampicillin 20 mg/kg/day in a single dose

c) sulfisoxazole 75 mg/kg/day in two doses

d) trimethoprim 0.5 mg/kg/day in addition to sulfisoxazole

The use of vaccines as prophylaxis against pneumococcal otitis has been proposed but the results are modest in providing protection, probably due to the fact that the age group in which otitis occurs most frequently is the one

with the least immunologic response to these antigens. Asthmatic children have a significant decrease in acute otitis when prophylaxis includes both pneumococcal vaccine and sulfisoxazole.¹⁸

Surgical Treatment (Table 2)

Evacuation of middle ear effusion with or without placement of a ventilation tube is the most common surgical procedure performed in the pediatric age group. Over one million ventilation tubes are placed each year. Although many physicians believe that the only effective treatment of OME is tympanostomy with the placement of ventilation tubes, controversy still exists concerning the role of surgical intervention.

Myringotomy is a surgical incision of the tympanic membrane. It is associated with few complications but has limited indications due primarily to its temporary nature. Indications for simple myringotomy are:

1) Suppurative complications of middle ear disease such as acute mastoiditis, labyrinthitis, facial paralysis, or meningitis.

2) Severe otalgia as a result of stretching of the tympanic membrane by suppurative material in the middle ear space.

3) Need to make a microbiologic diagnosis. For example, middle ear fluid should be obtained for culture and sensitivity studies in the following circumstances: a critically ill child, persistence of symptoms despite apparently adequate antibiotic therapy, AOM arising while on medication for other conditions, infection in the neonate, and infection in the immunologically compromised child.

Complications of myringotomy are exceedingly rare in competent hands. Ossicular chain disruption, injury to an aberrantly located jugular bulb or facial nerve, or residual tympanic membrane perforation are some problems which might possibly be encountered.

Several studies have been performed to evaluate the efficacy of tympanostomy with placement of ventilation tubes in the treatment of OME. In general, the studies now indicate that tubes are effective in treatment of *chronic*, *non-suppurative otitis media*. As examples of current findings:

Gebhardt¹⁹ evaluated 108 children with at least three episodes of AOM. Of these children, 87% had their first infection before the age of 1 year. Half of the children underwent bilateral tympanostomy with ventilation tube insertion and half did not. Forty-five percent of the tube group had no further infections, while only 5% of the control group remained free of infection.

Toss and Poulson²⁰ (1982) studied 68 children with an average of 3.8 episodes of AOM in the six months prior to tube placement. In the six months after ventilation tubes were placed, there were only 0.8 episodes per child.

Armstrong²¹ (1981) evaluated 238 children with chronic OME of over one year's duration. Infection resolved in 87% of these children with one tube insertion. Resolution required two to six tube insertions over a three-year period in 12% of cases. The effect of tubes in this study of chronic ear disease (infections plus hearing loss) showed that 83% had a significant improvement in hearing and reduction in the number of middle ear infections.

Even if infection should recur after tube placement, it is much less painful for the child and, therefore, less traumatic for the parent.

Most critics of tube placement cite cost, anesthetic risk, and complications from the tubes as reasons to avoid their use. While these are all valid concerns, they deserve closer scrutiny.

There is cost and risk associated with antibiotic use.22 Stevens-Johnson syndrome, development of drug allergy, repeated visits to the physician with associated loss of productive time for parent and child, prolonged morbidity, persistent hearing loss, and development of resistant organisms are but a few of the considerations in reliance on medical therapy alone. The cost of repeated prescriptions as well as the inconvenience of administering medicines with their side effects over long periods of time need to be considered in the equation. One must be aware of the personal and social costs of chronic hearing loss in speech development as well as the handicapping effects of impaired communication ability.

Anesthetic risks are potentially a more potent argument for avoiding tube placement. Remembering, however, that the serious complication rate for general anesthetics administered in competent hands to this patient group is so low as to be almost statistically insignificant, this objection seems more theoretical than real. In truth, the patient is at more risk during the drive to the hospital than during the administration of the anesthetic. A search of the literature

TABLE 2

Surgical Treatment of Otitis Media with Effusion (OME)

A. Tympanostomy

- 1. Suppurative complications
- 2. Severe otalgia
- 3. Microbiologic diagnosis
- 4. An immunologically compromised child

B. Tympanostomy with Ventilation Tubes

- a. Control recurrent infections
- b. Correct chronic non-suppurative otitis media present 3 months or longer
- c. Children under 2 years of age with recurrent infections while receiving multiple antibiotics
- d. Edema of middle ear mucosa without fluid
- e. Hearing loss impacting speech development, social growth, etc.

reveals no case of mortality or significant morbidity from anesthesia in association with tube placement.

Complications of the surgery are minimal.²³ Tympanosclerosis (<5%), otorrhea (5-10%), persistent perforation of the drum (<1%), cholesteatoma formation (<0.5%), and drum atrophy (<1%) are all potential surgical complications. However, these complications are also seen in ears which have never received surgery. The complications encountered are usually minimal in impact.

Conclusions

While many children have occasional episodes of OME or AOM which respond well to conservative medical therapy, there remains a significant group which requires more intensive treatment. Ventilation tubes have proven to be a simple, safe, effective and relatively inexpensive means of treatment in this group. They have their best effect in controlling recurrent infections and in correcting chronic non-suppurative otitis media present for three months or longer.

Approximately 80% of patients with tubes respond after one insertion and require no further therapy.²⁴

The judicious use of ventilation tubes in treatment of OME and AOM

seems well-founded.²⁵ Just as it is inappropriate for surgical intervention to be used for the infrequent illness or before adequate medical mesures have been tried, it is also unwarranted for surgical therapy to be dismissed as something to be avoided at all costs.

Some primary care physicians have expressed the opinion that if ear infections can be controlled by long-term administration of antibiotics, no further therapy should be considerd. They seem to neglect the more subtle but equally important factor of chronic hearing loss and attendant retardation in speech development. In a study of 1.200 children, it was found that 9% had language deficiencies linked to chronic hearing loss. The investigators felt that a large percentage of that number was due to ear infections and the fluid which remained in the middle ear following resolution of the infection. This chronic effusion suppressed hearing and associated speech development.

There are numerous possible etiologies for OME. Until these causes are controlled or eliminated, the disease will continue to be with us. Teele, et al, in a study of 2,565 children with AOM, showed that middle ear effusion persisted in 10% of the children three months after the acute infection

was cleared. It is this group of children with persistent effusion which can benefit from the use of ventilation tubes that eliminate hearing loss, recurrent infection, and constant daily use of antibiotics or other medications.

Ventilation tubes are not a panacea. They do buy time for the ear to mature and be free of disease in a critical period of development. Used for the proper reasons, ventilation tubes are a powerful adjunct to other therapies for OME and should be considered part of routine care for this needlessly handicapping condition.

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Indications and Preparation for Aeromedical Transport



ADULT CRITICAL CARE MEDICINE

Methodist Hospital of Indiana Inc JOSEPH D. PHILLIPS, M.D.¹ MICHAEL W. PETERS, M.D.²

OW DOES ONE combat a disease that has a sudden onset, devastating consequences and unpredictable occurrence? Furthermore, how does one combat a disease that:

- kills more young and productive citizens (#1 killer from ages 1-40) than any other
- leaves twice the number of people disabled than it kills
- kills more children than all other diseases combined
- requires as much as \$85 billion per year (\$233 million per day) in medical costs, rehabilitation, lost productive time, aid to dependents, and long-term disability
- accounts for more years of lost life than cancer and heart disease combined¹
 - has no effective immunization
- relies on education and legislation for prevention?

How does one reduce the legion consequences of trauma, the forgotten disease of modern society? Aeromedical transport to an appropriate trauma center may be a partial answer to this complex problem.

Background of Aeromedical Transport

Aeromedical transport by helicopter of wounded soldiers started in the Korean War and became routine in the Vietnam conflict. Time to medical care dropped from an average of 12 to 18 hours in World War I to 65 minutes in Vietnam partially due to helicopter transport. Mortality rates decreased

from 8.5% in World War I to 1% in Vietnam because medical care was available more quickly by more skilled medical personnel and because of advances in medical treatment in temporary forward hospitals.²

With the success of military aeromedical transport, interest turned to civilian use. Experience in the early 1970s met with some success, and Maryland and Illinois developed statewide programs to air transport severely injured patients. This led to the development of the Emergency Medical Services (EMS) Act of 1973, designed to provide assistance in the development of comprehensive EMS systems.²

In October 1972, St. Anthony's system in Denver initiated the first hospital-based, private air emergency medical service. The private medical communities' enthusiasm for air transport as an attempt to reduce the mortality and morbidity associated with severely injured and ill patients has been apparent by the expansion to more than 160 programs by 1987.

Are these aeromedical programs, each estimated to cost in excess of \$1 million per year, accomplishing the objectives of decreasing morbidity and mortality? There is little doubt that patients with trauma to multiple organs have a better outcome when cared for at a major trauma center. Is helicopter transport the best way to get these patients to these centers?

Baxt, utilizing the physiologic trauma score³ and the anatomic injury severity score,⁴ has shown a significant decrease in the mortality of trauma patients transported by helicopter compared to ground transport.^{5,6} Siegel from the Maryland Institute of Emergency Medical Services System also

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Correspondence: Joseph D. Phillips, M.D., Emergency Medicine and Trauma Center, Methodist Hospital of Indiana, 1701 N. Senate Blvd., P.O. Box 1367, Indianapolis, Ind. 46206. reports a substantial reduction in mortality."

Do patients with serious medical problems also benefit from aeromedical transport? Objective studies for severe illnesses are not available, partially due to the absence of measuring tools that are accurate, reproducible, and simple to use in quantitating the severity of a medical illness.

It is certainly logical to assume, however, that medical patients would benefit from aeromedical transport for the same reasons trauma patients benefit. The primary example would be patients with an acute MI, where today's aggressive, invasive techniques, in an effort to salvage myocardium, give the transport of the acute MI patient the same sense of urgency that exists with trauma patients.

The current emphasis on early, aggressive intervention in acute MI increases the need for rapid ALS transport of these patients to a facility offering emergency thrombolytic therapy, transluminal angioplasty, and cardiac surgery. ALS helicopter services offer an ideal way to carry out this type of transport.

Kaplan's studied 104 acute MI patients transported by helicopter and found no evidence of dilatorius effects as a result of moving the acute MI patient by helicopter. As stated, definitive studies to demonstrate medical benefits would be technically difficult. This report, however, shows that helicopter transport in acute MI is medically safe.

Role of Aeromedical Services

The primary role of the aeromedical service as a tertiary responder is to provide very specialized life support care for patients with very complicated illnesses and injuries. Secondly, the helicopter service can act as an Advanced Life Support (ALS) ambulance system providing hospital type emergency care at the scene, especially where ALS systems are unavailable. Thirdly, the helicopter can conserve the emergency medical care resources

of an area by providing ALS coverage to a community too small to support an ALS system and providing ALS transport where ALS ground transport is severely limited. Lastly, the aeromedical service can extend to the community hospital the expensive and sophisticated equipment and expertise of a tertiary care center.⁹

Indications for Aeromedical Utilization

There are seven basic considerations for utilizing aeromedical transport on the scene of injury or illness.¹⁰

- 1. Site. The victim may be inaccessible by ground ambulance, or ground transport may be delayed due to weather conditions, construction, or heavy traffic.
- 2. Severity of accident. Indicators of accident severity include: a) victim in the same car as a fatality, b) impact greater than 20 mph without restraints, 25 mph with restraints, c) fall greater than 10 feet, d) victim in close proximity to a blast, e) prolonged extrication, f) multiple victims, g) victim thrown from vehicle.
- 3. Speed. Straight line flight avoids congested roadways, traffic lights and detours. There is a threefold increase in mortality for every 30-minute delay in definitive treatment for patients with trauma to multiple organs.²
- 4. Smoothness. Helicopter transport provides a stable platform for victims suffering from suspected or unstable neck or back injuries. The helicopter, unlike ground vehicles, avoids pot holes, sudden stops, curves and turns.
- 5. Severity of the victim. Indicators of victim severity include: a) inadequate airway, b) difficulty breathing due to severe illness or injury, c) shock or the potential to go into shock quickly, d) partial or full thickness burns greater than 15-30%, e) spinal cord or head injury with numbness, tingling, changes in mental status and/or unequal pupils, f) severe hypothermia, g) medical and pediatric emergencies needing advanced life support assistance in areas where ALS is not immediately available.

- 6. Skill of the crew. The composition of aeromedical crews varies but all have very special life support capabilities. The helicopter can bring at least two extra pairs of highly skilled hands to assist with ACLS and ATLS interventions at the scene and while enroute to a definitive care facility.
- 7. Search and rescue. As a community service, the aeromedical helicopter can assist local EMS or governing law enforcement agencies in the search and rescue of a potentially ill or injured victim.

Types of Patients Served

The following persons or conditions are considered appropriate for aeromedical transport:

- 1. Trauma victims whose injuries are so severe that they are likely to die in the absence of highly skilled trauma management. Trauma indices allow quantification of severity of injury and can be helpful in decision-making for transport. Aeromedical transport should be considered if the trauma score or examination shows severe injury, if the patient is deeply comatose, or ground transport time is greater than 15 to 20 minutes.
- 2. Trauma victims with two or more organ systems involved.
 - 3. Acute spinal cord injury.
 - 4. Serious burns.
- 5. Cardiovascular problems including a) unstable angina, b) evolving myocardial infarction, c) complicated myocardial infarction (ventriculoseptal defect, mitral regurgitation, shock), d) complex arrhythmias, e) acute valvular catastrophes, f) aortic aneurysm, g) cardiac transplant donation.
- 6. Cerebral vascular accident with other signs of instability.
- 7. Other medical or surgical emergencies.
 - 8. Pediatric emergencies.
 - 9. Neonatal emergencies.
 - 10. Obstetrical emergencies.
- 11. Patients in urgent need of highly specialized procedures or therapeutics. Example: tissue plasminogen activator (tPA) for acute myocardial infarction.

Preparation for Transport

Detailed protocols for trauma patients are available through the Advanced Trauma Life Support course sponsored by the American College of Surgeons. Listed below are some reminders when transferring patients by helicopter.

- 1. Call early—occasionally, this may be possible before the patient arrives at your facility. Mortality increases when definitive care is delayed.
- 2. Airway management—intubate if secretions or blood may obstruct the airway, if respiratory distress is present, or if the Glascow Coma Score is less than 9-10.
- 3. Appropriate vascular access is needed for in-flight therapy (at least two large bore lines for trauma victims).
- 4. Assure appropriate cervical spine and/or extremity immobilization (pressure dressings for external bleeding) as indicated.
- 5. X-rays. (Avoid complete radiologic survey due to the extensive time required. However, lateral c-spine to C_7 and chest x-rays are very helpful in trauma patients.)
- 6. Foley Catheter if indicated (determine urethral integrity if trauma involved).
- 7. Nasogastric tube if emesis is likely (avoid, or place orally, if severe facial trauma present).
- 8. Hemoglobin/hematocrit, arterial blood gas.
 - 9. EKG.
- 10. Patient's records ready to go. After numbers 1-4, other items are not priorities and should be done only if they do not delay transfer.

Life Line Experience

Life Line aeromedical service at

Methodist Hospital of Indiana, Inc. has been in service since July 1979 and has transported approximately 5.100 critically ill and seriously injured patients. Currently, 780 patients are being transported each year, with 65% of the runs being trauma related. Pediatric trauma patients utilizing the Life Line service accounted for 105 of 217 injured children admitted to the Methodist pediatric intensive care unit in 1986. Patients with serious medical problems are not infrequently transported to other Indianapolis hospitals at the physician's or patient's request.

LifeFlight Experience

LifeFlight aeromedical service at Welborn Baptist Hospital, in Evansville, Indiana, has been in service since June 1982, and has transported approximately 1,700 patients to date. Current aeromedical transports are 350 per year, with approximately 45% trauma related, 15% cardiac, and the remainder a mixture of medical. pediatric and neonatal patients. While fewer than 20% of LifeFlight trauma runs presently originate on-scene, efforts continue to improve this number as on-scene response to trauma has been demonstrated to be the helicopter's area of greatest potential benefit.5,6

Aeromedical transport is developing a defined place in the care of the trauma patient to reduce mortality and morbidity. It must be utilized with effective triage guidelines in cooperation with existing EMS systems. The helicopter's role in contributing to the care of serious medical and surgical emergencies demands continued refinement as these expensive flight programs attempt to improve patient

outcome while reducing the need for duplication of expensive tertiary care facilities.

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Coronary Artery Bypass Grafting in the Elderly

Improving Bureaucratic Guidelines for Patient Selection

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HOULD THE ELDERLY patient undergo coronary artery bypass grafting (CABG) in this age of bureaucratic pressure to limit the indications for this surgery? This question is relevant in Indiana for a number of reasons.

First, Diagnostic Related Group (DRG) reimbursement has given all hospitals the financial incentive to admit only the least severe cases within each of these categories: the shorter the hospital stay for any given DRG category, the more profit the hospital makes. The elderly patient, defined as at least aged 70 years, tends to have a limited physiologic reserve. Therefore, this patient usually stays in the hospital longer than younger patients. Due to the longer hospital stay, the elderly CABG patient may not be a "good revenue prospect" because the income of the health care industry is now derived from one charge per episode of patient care rather than from individual charges for services rendered.¹

Second, the Indiana Peer Review Organization (IPRO) in 1986 mandated that the mortality rate for coronary artery bypass surgery (DRG 106 and 107) should be no more than 5.2% for all patients aged 65 and over.2 IPRO's mortality rate was based on the Coronary Artery Surgery Study (CASS), the famous prospective national cooperative investigation of CABG patients. The majority of the patients in this study were aged 69 years or younger.3 The mortality rate for patients aged 70 and over in the CASS study was 7%. IPRO's mandated mortality rate ignored important considerations such as the patient's severity of illness and the rate of disease progression. The CASS study took great pains to explore the severity mix of patient populations. Such stratification is essential for comparing different patient populations, whether between different institutions or within the same institution at different times. Thus, apples are compared to apples.

Third, the national incidence of CABG in the elderly is rising dramatically. Between 1974 and 1979, only 3.1% of all patients receiving CABG in the CASS study were elderly. In the pre-DRG days, elderly patients constituted 10% of the Evansville open heart caseload. Now, in spite of the financial and bureaucratic disincentives to operate on elderly patients, more than 20% of our CABG patients

are 70 years or greater. At least 91,000 people aged 70 years or more live in the 32 counties comprising our service area in the tri-state region. We predict this rising operative incidence will continue.

This paper examines the surgical results in our elderly CABG patients. It explores the clinical severity of their illness and their mortality/morbidity. Our review contemplates whether bureaucratic pressure to limit elderly CABGs has influenced the selection of patients for surgery. It scrutinizes IPRO's goal of a 5.2% overall mortality. Finally, it questions whether IPRO's thesis is tenable in its present form.

Materials and Methods

Our CABG patients operated on between January 1, 1986 and June 30, 1987 were prospectively studied. Included in this review were all patients who were 70 years or older. An eightpage data sheet was completed during hospitalization on all open heart surgery patients operated on at Deaconess Hospital, St. Mary's Medical Center, and Welborn Baptist Hospital in Evansville, Indiana. All information from the data sheet was entered into the computer; the results were tabulated. The 30-day mortality rates were cross-checked with the medical records departments of each hospital.

We prospectively categorized each of our patients using the following definition for surgical urgency:

1. "Elective" meant the patient's surgery could wait at least 48 hours

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from the time he was first seen by the surgeon.

- 2. "Urgent" was defined as those patients whose condition was so unstable that they were operated on with 24-48 hours of the surgical consultation. These patients were usually in an intensive care unit receiving maximum medical therapy which often included intravenous nitroglycerin, intravenous heparin, beta and calcium channel blockers, and often intra-aortic balloon counter-pulsation support.
- 3. "Emergency" indicated those patients who must undergo surgery as soon as humanly possible, for example, those patients who represented acute angioplasty failure or those patients who were extending their myocardial infarction or evolving a new myocardial infarction.
- 4. A "salvage" patient was defined as one whose operative risk was greater than 50%. Surgical patients in true cardiogenic shock were typical of this group.

We defined our elderly patients as those aged 70 or over.

Patient Population Profile

The review demonstrated that 153 elderly patients were operated on between January 1, 1986 and June 30, 1987. They represented 20.4% of the total coronary artery bypass graft patients operated during the same time period. The elderly patient mortality was 7/153 or 4.57%. Four of the 92 patients aged 70-74 died (4.3%). Three of the 61 patients aged 75-88 died (4.9%).

Risk factors included hypertension in 64.7%, a positive coronary artery disease family history in 49%, a positive smoking history in 41.8%, diabetes in 24.8%, obesity in 23.5%, and hyperlipidemia in 16.9%. In addition, chronic obstructive pulmonary disease was present in 11.7% of our elderly surgical population.

No patient was in Canadian Heart Association Angina (CHA) Class I. Nineteen patients were in CHA Class II; 65 were in Class III; and 69 were in Class IV. Mortality by angina class TABLE I Comparison of CABG in the Elderly

	CASS	Evansville
Overall mortality:		
CABG pts. aged 70 or more	7%	4.5%
Surgical urgency		
classification*		
Elective	71%	60.1%
Urgent	22%	30.7%
Emergency	1º/o	7.8%
Salvage	0 %	1.3%
Mortality by age:		
70-74	6.6%	4.3%
	16/241	4/92
75-84	9.5%	4.9%
	4/42	3/61
Mean length of		
stay after CABG		
70-74	14 days	10.5 days
75-84	16.5 days	13.9 days
*This data available only for patien	ts 65 and over in th	e CASS study

revealed that two patients with Class III and five patients with Class IV died after surgery.

Evolving myocardial infarcts were present in 8.5%; myocardial infarcts within 30 days were present in 18.9%. Remote infarcts were present in an additional 28.7%. Redo coronary artery bypass grafting was done on 3.3% of our patients; thus, 96.7% were being operated for the first time.

One patient had a single bypass, 11 had a double bypass, and 41 people required a triple bypass. In addition, 48 had a quadruple bypass; 35 had a quintuple bypass; 14, a sextuple bypass; 3, a septuple bypass. Thus, the average number of grafts per patient was four.

Complications included confusion of a transient nature in 13.7%, prolonged intubation in 13%, leg infections in 11.1%, and significant pleural effusion in 7.8%. Our patients also required reintubation in 6.5%, pneumothorax tube therapy in 4.6%, re-operation for bleeding in 3.9%. Cerebrovascular ac-

cident occurred in 3.3%; tracheostomy was needed in 3.3%. Perioperative myocardial infarction was demonstrated in 2.6% and deep sternal infection in 1.9%. None of our patients had clinical evidence of pulmonary emboli.

Length of stay from operation to discharge averaged 11.5 days. The median stay between the operative date and discharge was nine days. The minimum stay was five days; of those patients discharged, the maximum stay was 73 days. These results compare favorably with the overall population of our coronary bypass patients who had an average length of stay of nine days and a median length of stay of eight days. The 70-74 age group had a mean length of stay of 10.5 days, and the 75-88 year old group had a 13.9-day average length of stay.

Results

Sixty point one percent of our patients had elective surgery; 30.7% had urgent surgery; 7.8% had emergency

TABLE 2
Differences Between CASS Study Criteria and IPRO
Criteria as Related to Mortality for Patients
Over Age 65

	CASS	IPRO
Definition of Death	Death within 30 days of surgery	Death while hospitalized
Urgency stratification mortality	Elective 3.0% Urgent 6.7% Emergency 13.7%	None
Age stratification of mortality	Mortality tends to increase with age: 65-69-4.6% 70-74-6.6% 74-84-9.5%	None
Ventricular end diastolic pressure stratification	Mortality if less than 20mm of mercury = 4.2% If > or = 20mm of mercury = 8.3%	None
Ejection fraction stratification	Mortality if EF > 50% = 4.1% if < 50% = 8.7%	None
Severe coexisting disease	Patient excluded	Patient excluded

surgery; and two patients, or 1.3%, underwent salvage surgery. The mortality rate rose depending on operative urgency. There was one elective patient death, one urgent patient death, three emergency patient deaths. Eleven patients were operated on following PTCA. Of this group, four were elective, one was urgent, and six were emergency operations. Two of the emergency PTCA patients died.

A review of the patient population's measured ejection fraction showed that one of 97 patients (1%) with an ejection fraction greater than 50% died. Five of 51 patients with an ejection fraction of less than 50% died, giving a mortality rate of 10%. In addition, there were five patients whose ejection fraction was not measured. It was decided at catheterization that these patients were too delicate to withstand

a ventriculogram; one died following surgery.

Left ventricular end diastolic pressure was also found to be prognostically significant. Of the 75 patients with an end diastolic pressure of 20 or less, only three died. Two of 36 (5.5%) patients with an end diastolic pressure greater than 20 died.

Discussion

Our prospective study of elderly CABG patients disclosed that in the past 18 months, the 30-day operative mortality was 4.57%. The Evansville surgical mortality rate compares favorably with the death rate of patients aged 70 or over in the CASS study (7.0%). Additionally, the mortality rate reported from the Milwaukee Cardiovascular Data Registry was 7.4% in 1987. There was a higher incidence of "urgent" and "emergency"

surgery done in Evansville patients than in the patient population of the CASS study (See Table 1). In contrast to the CASS study, we did not exclude either patients with ejection fractions of less than 35% or those with left main disease. Thus, our patient risk severity was higher than the CASS study. Our operative mortality was gratifyingly less than the CASS.

Recent data from IPRO showed the 1986 overall CABG mortality rate in Indiana for patients aged 65 or over was 7.3%. Specifically, the IPRO reviewed 895 coronary artery bypass graft patients 65 years or over who were discharged from 20 Indiana hospitals doing heart surgery between August 1986 and January 1987. Of these surgical patients, 509 were aged 70 or over and 45 died.* Thus, the IPRO found the mortality rate for patients over 70 years of age was 9% in Indiana. To improve the statistics, "IPRO proposes to reduce deaths attributed to unnecessary surgery for the DRG 106 and 107 to a mortality rate of 5.2%".2

Our data and the medical literature^{3,5} agree that operative risks for CABG patients depend mostly on the degree of urgency of the patient's illness, his age, and the hemodynamic evidence of abnormal left ventricular function (See Table 2). The IPRO, however, has decided to ignore the severity risk of the patient population they examine. Instead, they hope to improve the mortality rate by reducing the numbers of "unnecessary surgery." This "unnecessary" term is confusing, misleading, and suggests some vague bureaucratic parsimony.

Table 3 lists the current IPRO surgical indication criteria for CABG. Presumably, if the patient does not meet these criteria, the IPRO could deny payment and consider the surgery "unnecessary." Under these

^{*}A personal communication, James B. Elmore, Manager, Health Information Systems, PEERVIEW, Carmel, Indiana, July 8, 1987.

guidelines, the elderly patient with unstable angina, who has additionally metastatic prostatic cancer in remission, would be considered ineligible for coronary artery bypass surgery. By definition, the IPRO considers his surgery "unnecessary," although this decision may not be clinically cogent. We are not sure how these criteria are derived and question if the IPRO's guidelines are equal to their assigned job of limiting unnecessary surgery. An admission index that is good for demarcating early admission criteria may not be satisfactory for identifying the final diagnosis or the eventual outcome.8

If an excessive mortality rate for any Indiana hospital or any individual surgeon is found, the IPRO will do an "additional review." In the case of a surgeon, the review may lead to a required attendance at a Continuing Medical Education program which pertains to the problem identified. There may also be an intensive review of the physician's cases. He may even be required to seek additional M.D. consultation for specific types of patients identified by the review. Outright initiation of other sanctioning procedures may also occur. If a hospital itself seems to have a higher than acceptable mortality rate in these patients, that institution may be required to investigate the problem and implement a corrective action plan. Continuing Medical Education and sanctioning proceedings may be initiated if the problem is not resolved to the satisfaction of the IPRO.

While one cannot object to the general value of improving quality of care, it is worthwhile to question the rationale of IPRO's assignment of a 5.2% mortality goal for CABG patients aged 65 or older. This number was based on a pre-selected low risk group of patients found in the CASS study. This study was a cooperative one in which the elderly patient represented only 3% of the total patient population. In fact, only 58 elderly patients per year were being operated upon by the

TABLE 3 IPRO's Surgical Indication Criteria for Coronary Artery Bypass Graft

- 1. Was there greater than 50% reduction in the luminal diameter of a major coronary artery (right coronary artery, left main coronary artery, left anterior descending artery, left circumflex) angiographically proven, producing one of the following:
 - a. angina
 - b. positive treadmill exercise test
 - c. positive thallium scintigraphy
 - d. old myocardial infarction
- 2. Was stenosis untreatable by angioplasty or was there a failed angioplasty?
- 3. Did patient have distal disease precluding successful bypass?
- Did patient have severe intercurrent disease? (i.e., metastatic carcinoma, severe chronic obstructive lung disease requiring oxygen therapy, advanced renal disease requiring dialysis, Alzheimer's disease)
- 5. Was patient's age > (greater than) 80 years old with severe mental and/or physical deterioration?

eleven hospitals participating in the CASS study. In contrast, in Evansville alone, 153 elderly patients were operated on in the past 18 months.

If the operative mortality rates depend on age and on how sick the patient is, what good does it do to mandate arbitrary mortality rates for CABG in the elderly by age alone? Will the real and perhaps unintended effect of IPRO's rule become that of rationing health care? Surely, if any physician takes the IPRO's mortality rate seriously, then the sickest and most unstable elderly patients will be denied their only chance for survival and an

improved quality of life. With surgery, nearly two-thirds of these symptomatic elderly patients might be expected to live an additional eight years.5 Another, also perhaps unintended, side effect of IPRO's mandate may be more numerous stable angina elective CABG operations among the elderly. This shift to the elective operation may ensue because the patient risk is lower and, therefore, the economic return is greater to the hospital. Analysis of our data, however, shows no difference in severity of illness has yet occurred in the elderly Evansville patient group. (See Table 4)

TABLE 4 Comparison of Severity of Illness in Elderly CABG Patients in Evansville

	Pre-DRG era	Post-DRG era
Time period	1978-1982	1/86 - 6/87
Number of patients	84	153
Angina Class II	10	19
Angina Class III or IV	74	134
Recent or evolving myocardial		
infarct +/- shock	13	52

In this age of tightening health dollar budgets, we must "fight not only the patient's illness, but also for the society's illness ... centralized bureaucratic control and the loss of autonomy for both the patient and physician".6 As Charles Hahn, an internationally respected Swiss cardiac surgeon, said recently: "The cost of open heart surgery cannot continue to be a screen to explain why proper treatment is not instituted. It is becoming more frequent to speak of crimes against humanity and yet the situation in cardiovascular disease is nothing less than a passive method of allowing people to die without the required care."

We recommend that the IPRO and other pertinent bureaucratic agencies be encouraged to put their quality assurance efforts on a more scientific footing by employing prognostically cogent phenomena. These phenomena should include clinical severity of disease, co-morbidity, rate of the disease progression, and different modes of therapy. How else can they appropriately judge a hospital's performance? How else can they accurately compare one hospital to another with

a standard norm or an expected level of outcome?

We encourage all healthcare providers and health bureaucracies to create, establish, and maintain accurate prospective ways to monitor medical therapies. Such methods should be detailed enough so that key distinctions about patient populations will not be omitted, lost, or obscured.8 Such distinguishing information may not be easily identified because some of the most cogent distinctions in diagnosis, prognosis, and therapy often depend on patterns of symptoms, severity of illness, the effects of comorbidity, residual functional abilities, and other clinical phenomena. These data are often not readily found in easily accessible hard information or by a casual review of the chart.

We believe our study exemplifies the types of data that IPRO should collect and analyze statewide. Such an analysis might lead to a more scientific formulation of guidelines for operability regarding elderly CABG candidates.

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Heart Disease and Diabetes: Deadly Link Uncovered

WILLIAM C. DUCKWORTH, M.D. Professor of Medicine

Hart DISEASE, as most people know, is the leading cause of death by disease in the United States. It is expected to kill some 540,000 people this year.

But here's another fact—one which all too few people know: Diabetes, together with its complications, is the *third* leading cause of death by disease in this country. With its complications, it will cause the deaths of 300,000 Americans in 1987.

New evidence shows a strong and deadly link between diabetes and heart disease. In fact, atherosclerosis (clogging of the arteries, which can lead to coronary heart disease) is the single most common cause of death in adults with diabetes in the U.S.

- Compared with nondiabetic people, approximately twice as many people with diabetes have heart conditions. This ratio comes out even higher when women alone are considered.
- Coronary heart disease is present in about 13% of diabetic adults and congestive heart failure in about 7%.

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At the time Dr. Duckworth wrote this report, he was Professor of Medicine, In diana University School of Medicine. He is now Head of the Department of Endocrin ology, University of Nebraska School of Medicine.

- Heart disease is involved in about 50 to 60% of all recorded deaths of diabetic adults and in about 15% of fatalities among diabetic children.
- The *risk of death* from heart disease in people with diabetes is about twice that among nondiabetic individuals.
- Heart disease due to blocked coronary arteries is the *direct cause* of at least one-third of all deaths occurring in diabetic patients over 40 years of age.
- Diabetic patients who smoke have an even greater risk of heart disease than do nondiabetics who smoke.

Blood Fats Play Role

According to the American Diabetes Association (ADA), most of the risk factors for atherosclerosis and coronary heart disease are much more prevalent in patients with diabetes than in the general population.

Among the most widely studied of these risk factors are alterations in cholesterol brought about by the faulty metabolism that characterizes diabetes. (Insulin deficiencies or flaws in its action inhibit the diabetic body's ability to turn sugar into energy.)

In untreated non-insulin-dependent diabetes, which accounts for about 80 to 90% of all diabetes in the U.S., two prominent components of cholesterol may be altered. The proportion of what is called very low density lipoprotein (VLDL) may increase, and the proportion of high density lipoprotein (HDL) may decrease.

High levels of VLDL are suspected of contributing to atherosclerotic heart disease in some individuals. High levels of HDL, on the other hand, appear to lessen the risk of heart disease. Small

wonder, then, that the diabetic patient who has developed high levels of VLDL and low levels of HDL is at increased risk for heart disease and, of course, for death from heart disease.

Steps That Can Be Taken

The picture is undeniably grim, but not hopeless. Whereas there is no way known to prevent or cure diabetes, ways are known to control the risk factors for heart disease—and that is just what the American Diabetes Association is recommending.

Diet and exercise have long been the cornerstone of non-insulin-dependent diabetes therapy. The objective has been to lower the abnormal blood glucose (sugar) levels that result when the body is unable to convert sugar into energy.

The basic diet for people with diabetes calls for a reduction in total fat and an increased proportion of polyunsaturates. It is virtually the same as the diet recommended by the American Heart Association (AHA) for lowering the high cholesterol levels that so often foreshadow impending cardiovascular disease. Of particular importance to the person with diabetes is that the fat-modified diet reduces VLDL concentrations and often can result in increased HDL levels.

Thus, strict compliance with the diet recommended by the ADA can, in many cases, not only bring down the high blood glucose levels that plague diabetic patients, but also forestall the atherosclerotic buildup that can lead to heart disease.

Although both the ADA and AHA emphasize that diets should be developed to serve each individual's specific needs, both recommend diets that restrict total fat intake to less than 30% of total calories consumed. Of that 30%, less than 10% should be saturated fats (such as in dairy products or meats); unsaturated fats (such as vegetable oil) should make up the other 20%. (The Average American diet is about 40% fat.)

The ADA also notes that current evidence suggests high-fiber diets and soluble-fiber supplements are helpful in improving metabolism, lowering total cholesterol levels and decreasing VLDL concentrations. It says an intake of 40 grams of fiber a day (the average daily intake for most adult Americans is around 10 to 30 grams) can be par-

ticularly helpful. And more is acceptable for individuals on weight-reducing diets—a matter of special concern in non-insulin-dependent diabetes, which so often is characterized by obesity.

Exercise is an integral part of any weight-reducing program, of course, but the ADA emphasizes that exercise alone, without concurrent caloric restriction, rarely results in significant weight loss. Still, the ADA says, even light exercise can be quite important in controlling both blood glucose and cholesterol levels.

If diet and exercise fail to cut the cholesterol levels to at least 200 milligrams per deciliter of blood, the

physician can prescribe cholesterollowering agents.

Robert Levy, M.D., the senior associate vice president for health sciences at Columbia University in New York, quotes one projection that says we could lower the heart disease death toll by 100,000 deaths a year if we could lower the average cholesterol level by just 10%.

Effective means of cutting the heart disease toll in the diabetic population, as well as in the population as a whole, exist.

It's a goal worth setting our sights on.

THE DETAILER

Guest Editorial

Few people outside of a physician's office or drug store have heard of a "detailer." These are both men and women who represent pharmaceutical firms, providing on-going education for physicians concerning drugs that cure or prevent illnesses.

Each medication is thoroughly explained—its origin, manufacturer, testing, side-effects or reactions, contraindications, costs, and everything else about the drug. Samples of the drug are distributed along with literature required by the Food and Drug Administration. Often a pen or paperweight emblazoned with the drug's name is left behind, as well.

When the detailer makes his call on the physician (about every six weeks or so), the rep will review the names and actions of other drugs that are still useful in treating the needs of patients. At the same time the detailer will question the physician and listen carefully to learn the doctor's new findings and uses or reactions concerning these drugs. Such findings are forwarded to the company for study which might lead to new recommendations for use of the drug. Thus, information passes in both directions and to everyone's benefit.

Only in the last few years have women entered the detailing field. Like their male counterparts, these women are usually pharmacists or R.N.s with experience in some branch of medicine. When a new drug is introduced to the market, these company representatives are called into the home office and intensively trained in every facet of the drug. These sessions can last seven to 10 days from dawn to dark. When they return to their territories they know the answers to questions that physicians will ask.

The detailer's territory can cover four to five states, or perhaps just half a city the size of Indianapolis. Most detailers are asked to see four to six doctors or pharmacists each day, with each visit lasting anywhere from 15 seconds to 30 minutes, depending upon the time available to each party.

After many years, most of the detailers are good friends with the physician they serve. At the moment there are 52 different pharmaceutical representatives calling on the average doctor. They are employed by major drug producers, large companies that make first-class products. It is a pleasure to talk with these folks about their kids or spouses, and they usually have a ready joke or two to pass along.

It is common to see a lady or gentleman with a large satchel bursting with boxes of samples, reams of printed advertisements, and fancy pens in most physicians' waiting room.

Who knows? He or she may have a new solution for what ails some of your patients. See him, Doctor.

Carry on, Detailers.—Gene S. Pierce, M.D., New Albany, Ind.

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*CARDIZEM** (dilflozem HCl) is indicoted in the treotment of ongina pectoris due to coronory ordery sposm and in the monogement of chronic stable angino (classic effort-associated angino) in patients who cannot tolerate therapy with beta-blackers and/or nitrates or who remain symptomatic despite adequate doses of these agents

*See Warnings and Precautions.

Please see brief summary of prescribing infarmation on the next page.





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Brief Summary

Professional Use Information

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CONTRAINDICATIONS

CARDIZEM is cantraindicated in (1) patients with sick sinus syndrame except in the presence at a functioning ventricular pacernaker, (2) patients with secand- ar third-degree AV black except in the presence at a functioning ventricular pacemaker, and (3) patients with hypotensian (less than 90 mm Hg systalic)

- Cardioc Conduction. CARDIZEM pralangs AV nade retractary periads without significantly pralanging sinus nade recavery time, except in patients with sick sinus syndrame. This effect may rarely result in abnarmally slaw heart rates (particularly in patients with sick sinus syndrame) ar secand- ar third-degree AV black (six af 1 243 patients far 0 48%) Cancamitant use af diffiazem with beta-blackers ar digitalis may result in additive effects an cardiac canductian. A patient with Prinzmetal's angina developed periods at asystale (2 ta 5 secands) after a single dase at 60 mg
- Cangestive Heart Failure. Although dilfiazem has a negative inatrápic effect in isalateď animal tissue preparations, hemadynamic studies in humans with narmal ventricular function have not shown a reduction in cardiac index nar consistent negative effects an cantractility (dp/dt) Experience with the use at CARDIZEM alane ar in cambination with beta-blockers in patients with impaired ventricular function is very limited. Cautian shauld be exercised when using the drug in such patients
- Hypotension. Decreases in bland pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotensian
- Acute Hepatic Injury, In rare instances, significant elevatians in enzymes such as alkaline phasphatase, CPK_LDH_SGOT, SGPT, and ather symptams cansistent with acute hepatic injury have been nated. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in mast cases, but prabable in same (See PRECAUTIONS)

PRECAUTIONS

General. CARDIZEM (dilhazem hydrochlaride) is exiensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given aver pralanged periods, laboratory parameters shauld be manitared at regular intervals. The drug should be used with cautian in patients with impaired renal ar hepatic function. In subacute and chranic dog and rat studies designed to produce taxicity high dases at diltiazem were associated with hepatic damage. In special subacute hepatic studies

aral dases of 125 mg/kg and higher in rats were associated with histalagical changes in the liver which were reversible when the drug was discantinued. In dags, dases at 20 rng/kg were alsa assaciated with hepatic changes, hawever,

these changes were reversible with cantinued dasing **Drug Interaction**. Pharmacalagic studies indicate that there may be additive effects in pralanging AV canduction when using beta-blackers ar digitalis cancamitantly with CARDIZEM (See WARNINGS)

Controlled and uncontrolled domestic studies suggest that cancamitant use of CARDIZEM and beta-blockers or digitalis is usually well talerated. Available data are nat sufficient hawever, ta predict the effects of cancamitant treatment, particularly in patients with left ventricular dysfunction or cardiac canductian abnarmalities. In healthy valunteers dilfiazem has been shawn ta increase serum digaxin levels

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-manth study in rats and a 21-manth study in mice shawed na evidence af carcinagenicity. There was alsa na mutagenic respanse in in vitra bacterial tests. Na intrinsic effect an fertility was abserved in rats

Pregnancy. Categary C. Repraduction studies have been canducted in mice, rats, and rabbits. Administration of dases ranging fram five to len times greater (an a mg/kg basis) than the daily recommended therapeutic dase has resulted in embrya and fetal lethality. These dases, in same studies, have been reparted to cause skeletal abnormalities. In the perinatal/pastnatal studies, there was same reduction in early individual pup weights and survival rates. There was an increased incidence af stillbirths at dases af 20 times the human dase ar greater

There are na well-cantralled studies in pregnant wamen, therefare, use CARDIZEM in pregnant warmen only if the potential benefit justifies the patential risk to the fetus

Nursing Mathers. Diltiazem is excreted in human milk One repart suggests that cancentrations in breast milk may approximate serum levels if use at CARDIZEM is deemed essential, an alternative method at infant feeding shauld be

Pediatric Use. Safety and effectiveness in children have nat been established

ADVERSE REACTIONS

Seriaus adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac canduction abnarmalities have usually been excluded

In damestic placeba-cantralled trials, the incidence at adverse reactions reported during CARDIZEM therapy was nat greater than that reparted during placeba therapy

The fallowing represent accurrences abserved in clinical studies which can be at least reasonably associated with the pharmacalagy of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The mast camman accurrences as well as their frequency of presentation are edema (2.4%), headache (2.1%), nausea (19%), dizziness (15%), rash (13%), asthenia (12%) In addition, the fallowing events were reported infrequently (less than 1%)

Cardizem® (diltiazem HCl)

□ 60 mg □ 90 mg □ 120 mg

Sig: tid

Cardiavascular

Angina, arrhythmia, AV block (first degree), AV block (secand ar third degree — see canductian warning), bradycardia, cangestive heart failure, flushing, hypatensian, palpitatians, syncape. Amnesia, gait abnarmality, hallucina

Nervaus System

tians, insamnia, nervausness, paresthesia, persanality change, samnalence, tinnitus, tremai

Anarexia canstination diarrhea Gastraintestinal

dysgeusia, dyspepsia, mild elevatians af alkaline phasphatase, SGOT, SGPT, and LDH (see hepatic warnings), vamiting, weight increase

Dermatalogic

Other

Petechiae, pruritus, phatasensitivity, urticaria Amblyapia, dyspnea, epistaxis, eye

ırrıtatian, hyperglycemia, nasal canges-tian, nocturia, asteaarticular pain, palyuria, sexual difficulties

The fallawing pastmarketing events have been reported infrequently in patients receiving CARDIZEM alapecia, gingival hyperplasia, erythema multifarme, and leukapenia Hawever, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established

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Postoperative Radiation Therapy in the Treatment of Lung Cancer: A Retrospective Study

STANLEY S. GIVENS, M.D. PETER G. GARRETT, M.D. NEWELL O. PUGH, M.D. DAVID R. ROSS, M.D. Indianapolis

IS HYPOTHESIZED that the ad juvant use of radiation therapy Lpostoperatively in patients with resectable non-small cell carcinoma of the lung and nodal metastases may im prove treatment outcome.1.2 It is theorized that if gross disease is completely resected, radiation therapy should then be able to sterilize residual, microscopic tumor deposits involving the hilar and mediastinal lymph nodes, thus rendering the pa tient free of disease.23 In fact, however, while several studies indicate both a survival and local control advantage from the use of postoperative radiation therapy, 4.5.7% others 9.10.11 demonstrate an improvement in local control but fail to show any lengthening of survival with postoperative radiation therapy. Consequently, controversy still surrounds the use of ad juvant radiation therapy in the treatment of lung cancer in the postoperative period.

From the Dept. of Radiation Therapy, Methodist Hospital of Indiana, Indianapolis. At the time this article was prepared, Dr. Givens was a first-year resident in the Transitional Residency Program at Methodist Hospital of Indiana

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We have elected to review our own experience with postoperative radia tion therapy delivered with curative in tent to lung cancer patients with hilar and/or mediastinal lymph node micrometastases discovered at the time of surgery. This report presents the results of our review.

Materials and Methods Patient Selection

Twenty-five patients with non-disseminated, non-small cell carcinoma

of the lung and nodal involvement were treated with surgery and postoperative radiation therapy at Methodist Hospital of Indiana, Inc. between 1983 and 1986 and were studied retrospectively. Using the staging criteria of the International Union Against Cancer, eight patients with stage Ib (T1 N1 M0), eight patients with stage II (T2 N1 M0), and nine patients with resectable stage III (T1 N2 M0 or T2 N2 M0) disease were identified and are the subject of this study. Patients with a

TABLE 1	
Patient Characteristics	

Age (Range 32-73 Yea	rs)	Tumor Histology	
30-39 years	1	Squamous cell carcinoma	12 (48%
40-49 years	3	Adenocarcinoma	11 (44%)
50-59 years	12	Adenosquamous carcinoma	1 (4%)
60-69 years	5	Large cell carcinoma	1 (4%)
70-79 years	4		
Sex		Tumor Location	
Male	17(68%)	Right upper lobe	9 (36%
Female	8(32%)	Right middle lobe	2 (8%
		Right lower lobe	3 (12%
		Left upper lobe	5 (20%
		Left lower lobe	6 (24%
Race		Stage	
Black	3(12%)	Ib (T1 N1 M0)	8 (32%)
White	22(88%)	II (T2 N1 M0)	8 (32%)
		III (T1 or T2 N1 M0)	9 (36%)
Surgery			
Lobectomy	10440%		
Pneumonectomy	15(60%)		

TABLE 2 Sites of Disease Recurrence

Site	Number	of Patients'
Bone	2	(8%)
Brain	3	(12%)
Contralateral lung	3	(12%)
Pericardium	1	(40/0)
Retroperitoneal lymph nodes, lumbar		
spine, and adrenal gland	1	(40/0)
Hemithorax	3	(12%)

*Note: Two of the total of nine patients who developed recurrent disease did so at multiple sites, thus making a total of 13 separate incidents of disease recurrence distributed among these nine patients.

TABLE 3
Radiation Treatment Volume and
Sites of Disease Recurrence

Radiation Treatment Volume	Local Recurrence Only		Local and ce Distant Recurrence
Mediastinum only (8 patients)	0	2	1*
Mediastinum plus ipsilateral Supraclavicular area (6 patients)	1**	2	0
Mediastinum plus bilateral Supraclavicular areas (11 patients)	0	2	1*

*Note: Local recurrences which occurred within the radiation treatment portals.

**Note: Local recurrence which occurred outside of the radiation treatment portal.

history of previous lung malignancy, incomplete resection of gross disease, and those with superior sulcus tumors or metastatic disease were excluded from consideration.

Surgery

All gross disease was felt to have been completely resected by the operating surgeon, either by lobectomy (10 patients) or pneumonectomy (15 patients).

Radiation Therapy

Ten MeV photons from a linear accelerator megavoltage radiation source were used for treatment. Treatment

fields included either the mediastinum alone (eight patients), the mediastinum plus the ipsilateral supraclavicular nodal area (six patients), or the mediastinum plus the supraclavicular nodal areas bilaterally (11 patients). An average dose of 46 Gy (range 45 to 54 Gy) was delivered to the treatment area using anterior and posterior parallel opposed portals, given in 1.80 Gy fractions five days per week over a 4.5 to 5-week period. Seven patients additionally received an average 10 Gy boost to the mediastinum (average field size 7 cm by 10 cm) using a shrinking field technique. The total dose of radiation delivered to the spinal cord was

limited to an average of 22 Gy. All patients received the full course of radiation therapy planned.

Follow-up

Hospital chart records were reviewed for follow-up information, and in the case of surviving patients, follow-up in formation was additionally obtained directly from the appropriate managing physician. The median length of follow-up was 17.5 months (range 3-42 months).

Results

Patient Characteristics

Selected characteristics of the patient population studied are shown in $Table\ 1$.

Sites of Disease Recurrence

Nine of the 25 patients evaluated developed recurrent disease (Table 2). A local recurrence was defined as a recurrence involving structures within the hemithorax of disease origin, the mediastinum. the ipsilateral supraclavicular nodal area, or the ipsilateral parietal pleura and chest wall. All other sites of recurrence were considered sites of distant relapse.

Radiation Treatment Volume and Sites of Disease Recurrence

The radiation treatment volume included only the mediastinum in eight patients, the mediastinum plus the ipsilateral supraclavicular area in six patients, and the mediastinum plus the supraclavicular areas bilaterally in 11 patients. $Table\ 3$ presents a comparison of the volume of tissue irradiated with the sites of disease recurrence.

Survival Data

The average disease-free survival was 14 months (range 2-38 months, median 10 months). The average overall survival was 17 months (range 3-42 months, median 22 months). The three-year actuarial survival (Kaplan-Meier method) was 41% (*Figure 1*). Of the 25 patients evaluated, five died with recurrent distant disease only, two

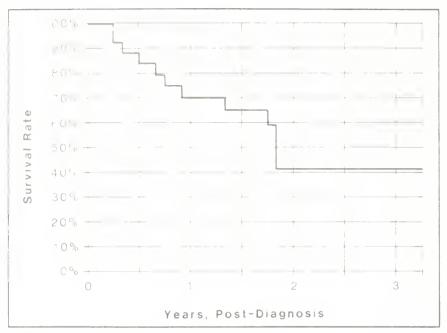


FIGURE 1: Three-year actuarial survival curve.

died with recurrent local and distant disease, five died with disease status unknown at the time of death but who were free of disease at last follow-up, and 13 are alive with no evidence of disease. No patient died with recurrent local disease alone.

Toxicity of Radiation Therapy

Patients commonly developed symptomatic radiation-induced esophagitis amenable to treatment. No patient developed radiation myelitis, symptomatic radiation pneumonitis or fibrosis, and no patient developed a fatal complication secondary to radiation therapy.

Discussion

Cox has recommended the use of postoperative radiation therapy for patients with carcinoma of the lung who are at high risk of having micrometastases involving the regional lymph nodes. It is these patients who are at risk of failing locally after "curative" surgery and who constitute approximately one half of all lung cancer patients treatable by surgery.

Three classic retrospective studies by Kirsh, et al. and Green, et al. concluded that survival can be improved in patients with squamous cell car cinoma of the lung and nodal metastases through the use of postoperative radiation therapy, though Kirsh, et al. found less of a survival benefit in patients with adenocarcinoma. Other retrospective studies have indicated that survival is increased with postoperative radiation in patients with regional node disease irrespective of cell type.2.4 A large, randomized, prospective, multicenter trial recently conducted by the Lung Cancer Study Group concluded that there is no survival benefit from postoperative radiation therapy in patients with involved hilar and mediastinal lymph nodes, but did show a definite improvement in the control of disease locally.10

Our study was undertaken to evaluate how patients at our institution with lung cancer and well-defined disease status (regional lymph node positive status) fared after treatment by surgical resection followed by radiation therapy, as compared to historical controls. The use of radiation therapy postoperatively has previously been proven unwarranted in patients with uninvolved regional lymph nodes^{5,6,12} and was not further addressed in this study. The absolute number of patients in our series is small and does not imply a paucity of lung cancer patients treated at our tertiary care hospital, but rather illustrates the rarity of patients presenting with resectable disease and nodal metastases. More than 900 patients with lung cancer were treated at our institution between 1983 and 1986.

Our results show a three-year actuarial survival of 41%, which is comparable to the data of Chung, et al. showing a three-year survival of 40% for patients with nodal metastases treated with postoperative radiation therapy (versus 42% for patients without nodal disease treated by surgery alone.)5 Furthermore, our results suggest that there is no added benefit to be derived from inclusion of the supraclavicular fossa within radiation treatment fields - in terms of survival or local control - as compared to treatment fields including only the mediastinum.

Finally, our results demonstrate that excellent local control is achieved with the use of radiation therapy postoperatively. We found that only 12% of our patients recurred with disease locally, which is consistent with the published reports of a retrospective analysis showing a 10% local recurrence rate⁵ and a prospective trial showing a 3% local recurrence rate 10 in patients with involved hilar and mediastinal nodes treated with radiation therapy postoperatively. We had no deaths among those who recurred with disease locally only, albeit studies have shown that a large number of patients can be expected to die with local disease alone.1

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MEDICAL MUSEUM NOTES ...

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Another layman, Chauncy Leake, Ph.D., in his re-publication of *Percival's Medical Ethics*, comments that physicians are influenced in their professional behavior by two ethical systems which are sometimes in conflict—hedonism and idealism:

"The ethical basis for the professional system of etiquette is primarily hedonistic, since it is designed to promote the dignity and pecuniary advancement of the individual physician and of the profession as a whole. On the other hand, the ethical basis for the professed attitude of medicine toward the sick and toward the public is idealistic, since it presumes that every professional act of the physician is motivated by rational and sincere concern for the ultimate welfare of society. These two ethical positions are difficult to compromise."

Another layman, Jean-Jacques

Rousseau, has offered this moral maxim: "(That we are) to avoid situations which place our duties in opposition to our interests, and show us where another man's loss spells profit for us."

This would appear to be easier said than done for the physician.

What philosophical guidance do we have from physicians? None of the oaths, from Hippocrates to the Declaration of Geneva, refers to fees. An exception is the Ten Commandments of Medical Ethics by Indiana's Frank B. Wynn, M.D. (JISMA, Dec. 1921, pp 422-425). His eighth, ninth and tenth commandments speak plain English and cover all bases:

VIII. Honesty in Business.

Thou shalt not steal; neither shalt thou make extortionate charges nor deceive by the secret division of fees. As a laborer worthy of hire exact fair compensation, but by open methods and with conscience void of offense toward thy fellow man.

IX. Obligation to One's Own.

Take heed of the morrow for the sake of thine own flesh and blood. Therefore shalt thou keep orderly ac counts, collecting from the full-handed just recompense for services rendered. To the poor and the families of deserving colleagues, thou shouldst account it a privilege to render faithful attention.

X. Personal and Public Service.

Remember thou art thy brother's keeper – physically in the measures and remedies advised for the prevention, alleviation or healing of disease; spiritually in the cheer thou bringst to heavy hearts and the courage thou givest to halting steps. So walking upright before man, mayest thou shew thyself approved unto God. Thus journeying toward life's end. If not singing with the Psalmist "My cup runneth over," thou wilt at least be sustained by the reflections of "A work man that neededth not be ashamed."

IS THIS HEDONISM?

Preliminary Results of Epilepsy Surgery at Indiana University Medical Center

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Correspondence: B.I. Lee, M.D., Dept. of Neurology, James Whitcomb Riley Hospital for Children A599N, 702 Barnhill Drive, Indianapolis, Ind. 46223. ANAGEMENT OF epileptic seizures centers around medical therapy by using various antiepileptic medications. However, for patients whose seizures do not respond to appropriate anticonvulsant therapy, surgical therapy for relief of seizures is a reasonable option to be considered. 4,6,13,29,33,34 Since Horsley first described the resection of a cerebral cortical scar one century ago in a patient with partial seizures, 12 epilepsy surgery has become a well known and effective therapy for relief of seizures.

Among various surgical procedures, anterior temporal lobectomy and/or corticectomy for extratemporal epileptic foci are by far the most commonly performed procedures and have met with the best results. 6,13,26,28 Among other surgical procedures, corpus callosotomy 8,36,36 was recently revived and its preliminary results have been encouraging but this procedure is still considered as a palliative rather than a curative measure.

For that reason, a comprehensive epilepsy surgery program at the Indiana University Medical Center adopted anterior temporal lobectomy and/or corticectomy for extratemporal epileptic foci, and details of the program were introduced in this journal last year. Here we will report the preliminary results of epilepsy performed at the IUMC over the past two years.

Patients

Since November 1984, twenty-two patients suffering from medically intractable complex partial seizures meeting the selection criteria of IUMC epilepsy surgery program¹⁸ were hospitalized for presurgical evaluation.

Neurological examinations were normal in all patients. CT scan was abnormal in two patients. Among those, 16 patients were subsequently operated. Surgery was deferred in the remaining six patients for various reasons including bitemporal foci, inability to localize epileptic foci or inability to record ictal events during the period of study. The clinical profiles of patents who received epilepsy surgery are summarized in *Table 1*.

Presurgical Evaluation

The standard battery of presurgical evaluation at IUMC epilepsy surgery program usually took two weeks of hospitalization and the patient's usual antiepileptic medications were gradually discontinued prior to the hospitalization to increase the chance of recording ictal events during the study. Prolonged EEG simultaneous videotape recording was performed for the first week of hospitalization. Pentothal activation test (Erba-Lombroso test) was performed during the period of EEG recording and ictal HIPDM-SPECT brain imaging study was performed by injecting HIPDM intravenously during the patient's electro-clinical seizure activities observed at the Epilepsy Unit.

Other tests, including intracarotid sodium amytal test, were performed during the second week of hospitalization when the patient's usual antiepileptic medications were restored to the previous level. All of the test results were collected and analyzed to make an accurate localization of the epileptic foci and to determine the possibility of complete resection of epileptic foci without causing significant

TABLE 1 Clinical Profile of 16 Patients Who Received Epilepsy Surgery at IUMC

		Ag	e at	Freq. of		H/O Etiolo	gy	F/H of Meds
Patient	Age/Sex	Sz.	onset	Seizures		F.S. of Sz		Sz.
1	27/F	5	yo	4/week	+	Unkn	_	DPH
2	39/M		yo	3/week	_	Unkn	+	DPH
								CBZ
3	26/F	20	yo	3/week	_	meningitis	_	DPH
						trauma		
4	33/F	12	yo	2-3/week	+	Unkn	_	DPH
								CBZ
5	30/M	7	yo	1-2/week	_	Unkn	+	DPH
								CBZ
6	31/F	1	yo	1/2 weeks	-	Unkn	_	DPH
								CBZ
7	33/F	17	yo	2-3/week	_	Unkn	_	CBZ
								DPH
8	21/M	10	yo	1/week		Unkn	_	CBZ
								DPH
9	8/F	5	yo	1/day	+	CNS	_	CBZ
						lesion		
10	17/M	2	yo	1/week	_	Unkn	_	CBZ
								DPH
11	33/M	4	yo	1/week	_	Unkn		DPH
								CBZ
12	29/M	6	mo	3/week	+	Unkn	_	CBZ
								DPH
13	42/M	35	yo	3/week	+	CNS	_	DPH
	10.77					lesion		CBZ
14	40/F	12	yo	1-2/week	_	Trauma	_	CBZ
4.0	00.74					1 11.1		VA
15	33/M	24	yo	2/month	_	encephalitis	_	DPH
1.0	10/3/	_	0.0	0.4/		m		PRM
16	19/M	5	60	3-4/week	-	Trauma	+	DPH
EC. f-l:l :	DDH 1		CDZ	1	DDM			CBZ
FS: febrile seizure	DPH: phenytoi	n	CBZ: c	arbamazepine	PRM: pr	тинаоле		

neurological deficits. Surgery was recommended for the patient when these two criteria were satisfied.

Surgery

Unilateral anterior temporal lobectomy was performed in 15 patients with additional adjacent frontal corticectomy in two patients. Right occipital lobectomy was performed in one patient. Epilepsy surgery was performed under the guidance of intraoperative electrocorticograms. Intraoperative cortical electrical stimula-

tion was performed in selected patients to avoid the resection of speech area. Partial anesthesia was used in 14 patients to avoid the suppression of interictal epileptiform activities by general anesthesia and for the patient's cooperation during cortical electrical stimulation. General anesthesia was used in the youngest patient (patient 9) and one patient who received right occipital lobectomy. For the resection of mesial temporal structures, piecemeal approach²⁷ was used initially but the technique of en bloc

resection⁷ was used in later series for adequate pathological examinations.

Results

A. Presurgical Evaluation The results of presurgical evaluation are summarized in Tables 2 and 3.

1. EEG

a. Interictal epileptiform activities: More than 90% of all interictal epileptiform activities seen in the prolonged EEG recording were localized or lateralized to the epileptogenic

TABLE 2
Results of Presurgical Evaluation in 16 Patients Who Had Epilepsy Surgery

	EF	EG	Thiopental	Neuropsychological		WADA	
Patient	Interictal*	Ictal**	activation	dysfunction	Speech	Memory	Handedness
1 RW	Sp2, F8	foc. Sp2	↓β, Rt T	bil. H.	Lt	Lt	Rt
2 JK	F7	reg., Lt T	↓β, Lt T	bil. H.	Lt	Rt	Lt
3 PH	Spl	foc., Spl	↓β, Lt T	Lt H.	Lt	Rt	Rt
4 DF	Т3	foc., T3	↓β, Lt T	bil. H.	Lt	Rt	Rt
5 ST	Spl	lat., Lt T	lβ, Lt T	Lt H.	Rt	Rt	Amb
6 MG	Spl	lat., Lt T	↓β, Rt T	bil. H.	Lt	Rt	Rt
7 NH	F8	reg., Rt T	↓β, Rt T	bil. H.	Lt	Lt	Rt
8 BM	Sp2	foc., Sp2	neg.	Rt H.	Lt	Lt	Rt
9 TK	F8, T4	no lat.	N.D.	Rt H.	Lt	l₁t	Rt
10 JJ	F4, Sp2,	reg.,	↓β, Rt T	Rt H.	Lt	Lt	Rt
	F8	Lt F-T					
11 SG	Sp2	foe., Sp2	neg	normal	bil	Lt	Rt
12 AC	Sp2	foe., Sp2	neg	Lt H.	Lt	Lt	Lt
13 TK	Sp2, F8	reg., Rt T	N.D.	Rt H.	Lt	Lt	Rt
14 SC	Sp1	lat., Lt T	1,3. Lt T	Lt H.	Rt	bil	Lt
15 RD	F8, T4	reg., Rt T bil. ind	neg	bil H.	Lt	Lt	Rt
16 AO	T6, P3, 02	reg. Rt PO	neg	Rt H.	Lt	bil	Rt

^{*:} Most active electrodes of interictal epileptiform activities. Scalp electrodes were placed according to international 10 20 system. **: Best ictal EEGs. Spl: left sphenoidal electrode. Sp2: right shpenoidal electrode. foc.: focal EEG onset. reg: regional EEG onset. lat: lateralization of ictal EEG discharges to one hemisphere.

regions in 13 patients. In the remain ing three patients, including one patient with right occipital foci, 10 30% of interictal epileptiform activities were lateralized to the contralateral temporal region. Occasional generalized spike and slow wave complexes were also seen in two patients.

b. Ictal EEGs: A minimum of three episodes of a patient's habitual ictal event were recorded on the CCTV-EEG in 15 patients. In one patient with MRI [esion in the right mesial temporal region, two episodes of ictal events were recorded. Ictal EEG patterns were classified into five categories on the basis of electro-clinical correlation:

- (1) Foca onset ictal EEG onset preceded the clinical ictal onset and localized to one or two contiguous electrodes.
- (2) Regional onset: EEG ictal onset preceded the clinical ictal onset and

localized to more than two contiguous electrodes.

- (3) Lateralized ictal discharges: EEG ictal onset consisting of rhythmic ictal discharges was clearly lateralized to one hemisphere but followed clinical ictal onset.
- (4) Bilateral independent: Ictal EEG onset started from one hemisphere and was followed by independent ietal discharges starting from the other hemisphere.
- (5) No lateralization: Ictal EEG onset and discharges were diffuse without any clear lateralization to one hemisphere

Focal EEG onset was seen in six patients and regional EEG onset in six patients. Therefore, scalp ictal EEG recordings provided strong evidence for the localization of epileptic foci in 12 patients. In the remaining four patients, icta EEG onset was preceded by

clinical ictal onset but clearly lateralized to the epileptogenic hemisphere in three patients. In one patient (patient 9), ictal EEG discharges did not show any lateralization to either hemisphere. Among six patients with focal EEG ictal onset, the initial rhythmic total discharges were localized at the sphenoidal electrode in five patients.

2. Pentothal activation test (Erba-Lombroso test)

Pentothal activation test was performed according to the procedure described by Lombroso and Erba.²³ Clear depression of drug induced beta activities (more than 50% reduction in the amplitude and amount) were seen in the electrodes placed in the epileptogenic temporal region in nine patients. No significant asymmetry of drug induced beta activity was seen in five patients. This was not performed in two patients with a structural lesion

TABLE 3
Results of Brain Imaging Studies

07HIPDM-S Patient	Epileptic foci	СТ	MRI	Interictal	Ietal
1	Rt T	normal	normal	IrCP, Rt F-T	trCp, Rt F-T
2	Lt T-F	normal	normal	rCP, Lt T	trCP, Lt FT
				Rt P	
3	Lt T	normal	†T2, dif. Rt T	↓rCP, Rt P O	trCP, Lt TP
4	Lt T	normal	normal	↓rCp, Lt T	trCP, Lt T-P
5	Lt T	normal	normal	↓rCP, Lt T	rCP, Lt F-T
				Rt mT	
6	Lt T	normal	normal	normal	trCP, Lt F-T
7	Rt T	normal	normal	rCP, Ft F-T	frCP, Rt F-T
8	Rt T	normal	normal	normal	N.D.
9	Rt T	calcified lesion	T2, loc.	rCP, Rt F-T-P	rCP, Rt F-T-P
		in Rt mT	Rt mT		sl. †rCP, Lt mT
10	Rt F-T	normal	normal	rCP, Rt F-T-P	↑rCP, Rt F
11	Rt T	normal	normal	rCP, Rt F-T	trCP, Rt F-T
12	Rt T	normal	normal	↓rCP, Rt F-T	↑rCP, Rt T
13	Rt T	normal	†T2, loc,	↓rCP, Rt T	N.D.
			Rt mT		
14	Lt T	normal	normal	IrCP, Lt F T	↑rCp, Rt F T
15	Rt T	normal	normal	normal	trCP, bil. T
16	Rt O	radiolucent	T2, loc.	rCP, Rt O	†rCP, Rt mO
			Rt P-O i)		
		lesion in	T2, loc.	trCP, Rt O	
		Rt P-0	Rt T ii)	6 . 1 1	

*: Two interictal HIPDM-SPECT performed in this patient. Fist study was performed during anticonvulsant therapy. Second study was performed when antiepileptic medications were withdrawn and very active interictal epileptiform discharges were seen in the right parietooccipital region.

dif.: diffuse loc.: localized rCP: regional cerebral perfusion mT: medial temporal lobe mO: medial occipital lobe 1T2: increased T2 relaxation time in T2 weighted MR brain imaging other abbreviations similar to Table 2

seen in the MRI and CT scan. No instance of false localization by pentothal activation test was seen in our population.

3. Neuropsychometric test

Interpretation of neuropsycho metric tests suggested bilateral hemispheric dysfunction in six patients and was normal in one patient. Among the remaining eight patients with lateralized hemispheric dysfunction, neuropsychometric tests correctly localized the epileptogenic hemisphere in seven patients and falsely localized in one patient.

4. Wada Test (Intracarotid sodium amytal injection test)²

Among nine patients with right

temporal foci, speech function was dominant in the left hemisphere in eight patients and co-dominant in both hemispheres in one patient. Memory function was lateralized to the left hemisphere in all patients. Among six patients with left temporal foci, left hemisphere was dominant for speech in four patients and right hemisphere was dominant for speech in two pa tients. These two patients with speechdominant right hemisphere were either ambidexterous or left handed. Memory functions were lateralized to the right hemisphere in five patients and co dominant in both hemispheres in one patient. In one patient with right occip ital foci, speech was dominant in the left hemisphere and memory was codominant in both hemispheres. Therefore, memory function was lateralized to the non-epileptogenic hemisphere in 14 patients with unilateral temporal lobe foci. Memory function was co-dominant bilaterally in one patient with left temporal foci and in another patient with occipital foci.

5. Brain imaging studies

Results of CT. MRI and HIPDM-SPECT brain imaging are summarized in *Table 3*. CT scan of the head demonstrated a calcified tesion in the right mesial temporal region in one patient (patient 9) and encephalomalacia in the right parieto-occipital cortex in the other patient (patient 16), probably

TABLE 4
Results of Epilepsy Surgery

			Se	izure frequency	Functi	onal status		
Patient	Surgery	Pathology	Pre op.	Post op.	Pre op.	Post op.	F/U	J
1	Rt ATL	mod. gli.	4/wk	2/ M *	DA	FE	28	M
2	Lt ATL	mil gli.	3/wk	1/2M	FE	FE	25	M
	Lt FC							
3	Lt ATL	min. gli.	3/wk	1 sz**	DA	FE	23	M
4	Lt ATL	subpi. gli.	2-3/wk	Sz-free, a***	DA	FE	19	M
5****	Lt ATL	mil gli.	1-2/wk	Sz-free, a	DA	DA	13	M
		small A-V mal.						
6	Lt ATL	min. gli.	1/2 wks	1 sz I-Po	DA	DA	12	N.
7	Lt ATL	normal	2-3/wk	1 sz I-Po	Hw	Hw	10	N
8	Rt ATL	normal	1/wk	Sz-free	DA	DA	10	N
9	Rt ATL	glioma	1-2/day	1/wk	St	St	8	N
10	Rt ATL	mil. gli.	1/wk	$1/\mathbf{M}$	St	St	7	N
	Rt Fe	mil. neu. loss						
11	Rt ATL	sev. gli.	3/wk	Sz-free, a	FE	FE	6	N
12	Rt ATL	min. gli.	1/wk	Sz-free, a	DA	DA	5	N
		sev. neu. loss						
13	Rt ATL	dysplasia	3/wk	$2/\mathbf{w}\mathbf{k}$	DA	DA	5	N
		sev. gli.						
14	Lt ATL	mil. gli.	1/wk	Sz-free	DA	DA	5	N
15	Rt ATL	mil. gli.	1/2 wks	1 Sz	FE	FE	3	N
16	Rt OL	ulegyria	1/wk	Sz-free	DA	DA	3]	N

*: Seizure-free for first 6 months after surgery. This patient was re-evaluated and showed remaining right mesial temporal epileptic foci which was reoperated recently. She has been seizure-free since reoperation (F/U = 2 months).

**: One episode of complex partial seizure occurred at 20 months after surgery when blood level of Dilantin was subtherapeutic.

***: Antiepileptic medications were completely discontinued in this patient.

****: Conventional cerebral angiogram failed to detect small A-V malformation seen in the pathological specimen. a: oceasional auras I-Po: immediate post op. ATL: anterior temporal lobectomy FC: frontal corticectomy OL: occipital lectomy DA: disabled FE: full-time employment Hw: housewife St: student min.: minimal mod.: moderate sev.: severe neu, loss: neuronal loss gli.: gliosis subpi.: subpial

related to previous blunt head trauma. MRI was abnormal in four patients, including two patients with abnormal CT. In patient 3, T2 relaxation time was increased diffusely in the left temporal lobe which was epileptogenic, and pathological examination showed intracortical scarring change. In patient 13, T2 was increased focally in the right medial temporal cortex, and the pathological finding was consistent with cortical dysplasia. However, a rapidly growing glioblastoma was found in the area of surgical resection five months later. Therefore, we

presume that the MRI lesion was a low grade glioma which transformed into a malignant glioma by uncertain mechanism after surgery.

Compared to relatively discouraging results of CT and MRI, HIPDM-SPECT brain imaging was quite useful in our population. Interictal HIPDM-SPECT demonstrated focal rCP defect in 13 patients. Among those, rCP defect involved epileptogenic areas as well as contralateral cerebral regions in two patients. In one patient, decreased rCP was seen in the remote cerebral region only. Therefore, interictal

HIPDM-SPECT correctly localized the epileptic foci in 10 patients, unable to localize in five patients, including three patients with normal studies, and falsely localized in one patient. In the patient with right occipital foci, one interictal HIPDM-SPECT performed when the patient's usual antiepileptic medications were discontinued showed increased rCP in the same area, which was described in our previous paper.¹⁹

The results of ictal HIPDM-SPECT were further encouraging and demonstrated increased rCP in the

epileptogenic areas only in 12 patients. In two other patients, increased rCP could be seen in the bilateral hemispheres. In patient 9 with a right temporal foci, rCP was maximally increased in the right hemisphere and less increased in the left medial temporal region. In patient 15 with right temporal focus, rCP was symmetrically increased in both temporal lobes. In this patient, ictal EEG recording at the time of HIPDM injection demonstrated bilateral independent patterns. In two other patients, ictal HIPDM-SPECT could not be obtained. Therefore, combined ictal and interictal HIPDM SPECT brain imaging were able to localize epileptic foci in 15 patients in our population.

In addition, the combined study provided confirmative localizing evidence for epileptic foci in 11 patients (9 patients with decreased rCP in the epileptogenic area only and two patients with decreased rCP in the epileptogenic area and other cerebral regions during interictal state) by demonstrating decreased rCP during interictal state and increased rCP during ictal state in the epileptic area (Figure 1).

B. Surgery

The surgical outcome of our patients is summarized in *Table 4*.

1. Complications

Unilateral anterior temporal lobectomy was performed in 15 patients with additional frontal corticectomy in two patients. Right occipital lobectomy was performed in one patient. Two patients developed immediate postoperative complications. One patient developed transient mild left hemiparesis which was completely resolved within one week after surgery. The other patient developed acute mental changes consisting of apathy and disorientation. CT scan showed a moderate swelling of the operated hemisphere. This was completely resolved in one week after the surgery.

Contralateral superior homonymous quandrantanopsia was detected

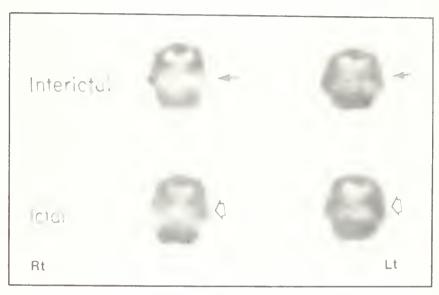


FIGURE 1: Interictal and ictal HIPDM-SPECT brain imaging (transaxial section) in patient 5. Interictal study showed decreased rCP in the left temporal (filled arrow) and ictal study demonstrated increased rCP in the same area (blank arrow), providing confirmative evidence of epileptogenicity of the lesion.

Rt: right Lt: left

in seven patients by visual field testing at confrontation after unilateral anterior temporal lobectomy. However, no patients complained of any difficulties with visual field defect. These results are quite comparable with the results of other series.13 In one patient who had right occipital lobectomy, left homonymous hemianopsia was developed as expected. However, partial congruous visual field defect was already present in this patient before the surgery. Therefore, there were no permanent, significant neurological deficits related to epilepsy surgery seen in our population.

2. Seizure control

The adequate evaluation of epilepsy surgery on seizure control usually requires a follow-up period of at least two years and our results should be regarded as preliminary at best. Complete seizure control with or without occasional auras was achieved in four patients among 11 patients whose follow-up period was longer than six months. In the remaining seven patients, two developed only one episode

of seizure during the immediate postoperative period and have been seizure-free since then. Significant reduction of seizure frequency (greater than 80% reduction compared to preoperative frequency) was achieved in the other five patients.

Considering all 16 patients operated, complete seizure control or significant improvement of seizure control (greater than 80% reduction or seizure frequency) was obtained in 15 patients and only one patient (patient 13) did not improve after surgery. The accurate localization of epileptic foci in this patient was confirmed by intraoperative electrocorticogram but he was subsequently found to have a rapidly growing glioblastoma in the area of surgical resection which would explain the poor surgical outcome in this patient.

3. Psychosocial function

The effect of epilepsy surgery on several cognitive functions, including memory, is being evaluated by repeating neuropsychometric testing at one year after the surgery. The number of patients who had follow-up neuropsychometric testing in our population is too small to be evaluated, although we did not find any significant cognitive deficits after surgery on follow up visits. Therefore, we evaluated the functional status of six patients who have been followed longer than 12 months after surgery. Three patients changed their functional status from total disability to full-time employment. One patient is working full time as before and the remaining two patients, whose follow-up period was the shortest, are still disabled. These results are certainly quite encouraging and document the impact of successful surgery on improved psychosocial adjustment, although further prolonged observation is required.

Discussion

The outcome of epilepsy surgery described here is preliminary and requires further prolonged follow-up of patients to assess accurate surgical outcome. However, our results, despite their preliminary nature, have been quite encouraging and were considered worthwhile to be reported. In our population, all patients except one (patient 13) achieved either complete seizure control or significant reduction of seizure frequencies (greater than 80% reduction after surgery). In addition, the only patient who had unfavorable surgical outcome was subsequently found to have a rapidly growing glioblastoma in the area of previous surgical resection which explained his poor surgical outcome. These results are, at least, quite comparable to the results of epilepsy surgery from other major centers which was reported as 60 80% of success rate. 4 14,26,28

The procedure of presurgical evaluation varies greatly with each center. At one extreme, epilepsy surgery is performed on the basis of interictal epileptiform activities only and at the other extreme, extensive EEG in vestigations including stereo EEG or intracranial electrode arrays are performed in all patients being invest

igated for potential epilepsy surgery. Between these extremes, many major epilepsy centers take a modest approach using primarily CCTV-EEG monitoring with bilateral sphenoidal electrodes and require ictal recordings before the decision for surgery is made.

The invasive EEG techniques are used rather selectively in a small proportion of patients because of its small but definite risks to the patient. For example, Montreal Neurological Institute in Canada uses stereo EEG technique in only 5-16% of their patient population.26,28 We are in favor of this conservative and more selective approach and this is further supported by similar surgical outcomes between centers using and not using these invasive EEG techniques. Our current protocols for presurgical evaluation do not include the use of invasive EEG techniques but require at least three ictal EEG recordings on CCTV-EEG with bilateral sphenoidal electrode recordings. We believe that most epileptic patients do not require these invasive EEG studies for localizing their epileptic foci and the use of invasive EEG techniques should be reserved for selected patients whose epileptic foci cannot be localized by using more conventional and noninvasive evaluating techniques.

We also think that the use of differ ent modalities of invasive EEG tech niques should be further individualized. For example, use of stereo EEG may be superior for investigating the lateralization of temporal lobe epileptic foci but the technique of subdural electrode arrays may be more useful for patients whose epileptic foci involve the extratemporal region or to delineate the extent of epileptogenic areas. With our encouraging results of epilepsy surgery and further development of our facilities, we are planning to use these invasive EEG techniques more selectively at our epilepsy center in patients whose epileptic foci cannot be determined by our current protocols.

Since introduction of positron emis sion computed tomography (PET) us-

ing 18-fluorodioxyglucose (FDG) in the field of epilepsy surgery,5,15,25 the localization of epileptic foci has been further facilitated. It has been reported that approximately 70% of the patients with medically intractable seizures show decreased local metabolic rate of glucose (LCMRglu) in FDG-PET brain imaging^{5,15} and investigators at UCLA claim that the use of stereo EEG was decreased by 30% in their patient population because of positive FDG-PET findings.6 However, PET is not available widely because of its high cost and problems with on-site operating cyclotrons.

In addition, the use of current PET technique is quite limited for studying interictal state only.25 The simple demonstration of decreased LCMR on PET performed during the interictal state could not prove that the lesion is epileptogenic because decreased LCMR can be seen in non-epileptic structural lesions as well as in areas of transient cerebral dysfunction not related to epilepsy.5,24 Therefore, interictal PET could not provide confirmative but suggestive information regarding the epileptogenicity of the lesion and further EEG investigations, including invasive EEG techniques, are indicated to prove that the lesion is in fact epileptogenic.

For functional brain imaging techniques, at least theoretically, to provide confirmative evidence for epileptic foci, both interictal and ictal studies should be performed to demonstrate the alteration of LCMR-decreased LCMR during interictal state and increased LCMR during ictal state in the same cerebral region.19 In this regard, cerebral blood flow studies using HIPDM-SPECT offer a significant elinical advantage. 19,20,21 HIPDM is an I-123 radiolabeled amine and taken up by brain cells in proportion to the regional cerebral blood flow and its intracellular concentrations are main tained stable for at least 60 minutes after its uptake.10,11,16,1

Because of its stable intracellular ac cumulation and the relatively long half-

life of I-123 (approximately 13 hours). HIPDM is being injected during patients' electroclinical seizures observed at the Epilepsy Unit.19 After the injection of HIPDM intravenously, the patient is transferred to the Nuclear Medicine suite for brain imaging. Therefore, we can obtain both ictal and interictal studies much more easily. compared to PET, which provides confirmative evidence of epileptic foci. 19,20,21 Our experiences with HIPDM-SPECT have been quite encouraging and we were able to localize the epileptic foci accurately in four patients whose EEG studies failed to localize clearly. Without combined interictal and ictal HIPDM-SPECT in these patients, further EEG investigations by using invasive EEG techniques might be undertaken.

The impact of successful epilepsy surgery is not limited to better control of seizures. It has been well documented that successful epilepsy surgery improves cognitive functions as well as pre-existing behavior problems which are quite common in patients with chronic seizure disorders.14,22,26,32 In our program, neuropsychological tests are repeated at one year after the surgery. Because of the short follow-up period in our patients, it was difficult to demonstrate the significant improvement of cognitive functions objectively in this study.

However, among five patients who have been followed longer than one year and were totally disabled before the surgery, three patients became fulltime employees, which is a dramatic change in their personal life. We are certainly aware that successful seizure control after epilepsy surgery is not the only factor involved with productive social outcome of epileptic patients,1 but is also related to previous personality, cognitive function and various psychosocial environments. For that reason, we strongly feel that these patients should be enrolled in various vocational programs after successful surgery to encourage them to work.

The encouraging results of our epilepsy program convinces us that surgery is an effective therapeutic modality which is being underutilized in our society and we feel that the responsibilities of developing this program further are more than real.

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Historical Prospective for Global Eradication of Measles

ROBERT J. WARREN, M.D. Richmond

Throbt CHCN of measies vaccine in he early 1960s has profoundly changed the incidence and patterns of the disease. Many physicians who began practice in the last 25 years have seen tew cases. Yet measles remains a threat in the United States and the toll world wide is almost beyond comprehension. The purpose of this presentation is to provide historical background to the need for global eradication of measles.

History

Epidenics of measles are known to have occurred in both the Roman Empire and in China 1800 years ago. The first written record of measles is credited to Rhazes, a 10th century Persian physician Records of parish clerks in England listed measles as a separate disease in 1629.

The first account of measles in America was in Boston in 1657. Because the New World was sparsely settled, the interval between epidemics was often 30 years. When an epidemic struck, everyone from newborn to 30 year-old adults were struck by the disease. From 1657 to the mid 1800s, the interval between epidemies in

Boston gradually decreased from 30 to three years, partly due to ships crossing the Atjantic in a shorter time, and partly to increased population density in the New World. By the turn of the 19th century, both Philadelphia and Boston had sufficient populations to maintain measles without importation from Europe.

Between 1700 and 1900, measles was intermittently mistaken as a manifestation of smallpox. Terminology was confusing, with the terms for measles, rubella, and other diseases often used for different diseases in various countries. In the early 1900s the Germans attempted to eliminate confusion by giving numerical designations to each of several rash diseases. Unfortunately, they included both smallpox and measles as "First Disease." The term, "Fifth Disease," which is used as a synonym for crythema infectiosum, is a remnant of this flawed classification.

Clinical Course and Complications

The picture of a toxic child with high fever, red eyes, puffy face, a brassy, repetitive cough, and confluent maculopapular rash is distinctive. The finding of Koplik's spots during the prodrome and early illness is helpful, but frequently not noted. Rash usually appears on the fourth day of fever. The illness reaches a climax on about the sixth day, followed by subsidence in a few days. Serious complications may occur in the respiratory tract and central nervous system.

In the United States, pneumonia and otitis media occur as a complication of measles in approximately 15% of patients. Encephalitis follows the disease about once in every one or two thousand cases. Half of those with enceph-

alitis have permanent neurologic sequelae. Before vaccination, approximately 400 children died of measles each year in the United States.

A rare complication of measles is subacute, sclerosing panencephalitis (SSPE). This condition, also known as Dawson's encephalitis, is a progressive deterioration of the central nervous system. It occurs on an average of seven years after measles. It is a slow virus infection. The mechanism of this unusual manifestation of measles infection is not understood.

Etiology and Pathology

Measles virus is a paramyxovirus. The primary pathologic feature is widespread distribution of multinucleated giant cells derived from cell fusion. Rash is caused by hypersensitivity to the virus. Rash cannot be due to humoral antibodies, because patients with agammaglobulinemia develop rash. Patients with impaired cell mediated immunity often have giant cell pneumonia without rash.

Several mechanisms are responsible for the immunosuppression which occurs during measles. Neutrophils, platelets, and T, B, and null lymphocytes are decreased in number. Neutrophil motility is defective. Immune globulin A is reduced, and immune globulin M is increased. Complement is reduced and there is frequent pathologic activation of the complement system. The cutaneous response to candida, phytohemagglutinen, and delayed hypersensitivity are depressed.

Serum antibodies, both IGM and IGG, appear in response to infection and immunization. Specific cell-mediated responses can also be

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demonstrated. IGA nasal antibodies are also formed, but are not protective against vaccine virus administered by intranasal aerosol. For this reason, children as young as 7 months will respond to immunization with intranasal vaccine, even in the presence of humoral antibody.

Epidemiology

Man is the only natural host for measles virus, but other primates can be infected in the laboratory and sometimes in nature. Measles is spread by direct contact with infectious droplets, or, less commonly, by airborne spread. The incubation period is 10 days (range 8 to 12) from exposure to initial fever. The usual interval between onset of rash in one case to onset of rash in an exposed child is 14 days.¹

The period of communicability begins about four days before the onset of rash and ends four days after rash. Measles is highly contagious. Secondary attack rate in household contacts exceeds 90%. Prior to introduction of vaccine, nearly everyone in the United States had measles during childhood.

Measles is seasonal with a peak incidence during late winter and early spring in the temperature zones. In the tropics, the peak season depends on cultural factors. Epidemics occur during those times when there is greatest contact between susceptible persons.

Immunization has changed the epidemiologic pattern of measles. Morbidity and mortality have been reduced dramatically. Before introduction of vaccine, 4 million children had the disease each year. One in 2,000 or so developed encephalitis and half of these were brain damaged by the illness. Measles killed 400 children per year. The incidence of measles has been reduced from almost 4 million to only 5 or 10 thousand cases per year. The incidence of encephalitis and other complications have been reduced proportionally.

As the proportion of susceptible individuals declined, the interval between epidemics has increased.

Measles now occurs among older age groups including college students and young adults.

Prevention

Public Health efforts to eliminate measles in the United States have changed little in the last 20 years. In 1966, I set forth the following approach² to measles eradication: 1.) All children born in this country should be immunized when they reach an appropriate age as part of their well baby care. 2.) Those who are missed by ongoing programs should be required to have immunization before attending school. 3.) Careful surveillance should be maintained. 4.) Immediate epidemic control measures should be initiated whenever cases are discovered.

The same approach is applicable today, with a few modifications. Outbreaks in schools and colleges have required particular attention. Outbreaks have been traced to students who were never immunized, those who received killed vaccine or live vaccine which was not stored properly, those immunized before one year of age, and those with erroneous documentation of vaccination.³ Careful documentation of immunization is now required for entry into most colleges.

When first introduced in 1963, live attenuated measles vaccine of the Edmonston strain caused frequent reactions of a moderately severe nature. High fever and rash were common. Several approaches were used to reduce the vaccine associated reactions. Inactivated (killed) vaccine, similar to inactivated polio vaccine was tried. The immunity was short lived. Combinations of killed and live vaccine were tried to achieve the advantages of both. The reactions were reduced, and immunity was durable, but side effects were intolerable. Killed measles virus vaccines were licensed in 1963 and withdrawn in 1967.

Another approach for reducing reactions to the original Edmonston strain was to give it simultaneously with immune serum globulin, which had been used for years to modify natural measles infections. Among the disadvantages was the need for two injections, and the need to carefully weigh each child and individualize each dose of immune serum globulin. The latter problem was circumvented, in part, by giving a standard dose of immune serum globulin by jet injector gun during mass immunization campaigns.⁴

A simpler solution emerged with development of further attenuated vaccine virus. This vaccine is now available alone, in combination with rubella vaccine, or with both mumps and rubella. Standards for use of measles vaccine are set forth by the committee on Infectious Diseases of the American Academy of Pediatrics.¹

Sabin and co-workers⁵ have shown that the intranasal route is effective, even in children as young as 7 months. Intranasal immunization has potential for use in developing countries, where shortage of medical facilities and early age of infection with measles are problems hampering conventional parenteral vaccination.

Reactions to the further attenuated vaccines are seldom troublesome. Fever and rash are rarely reported by parents of children vaccinated in a private pediatric office. Rare, but more serious complications are difficult to evaluate. The first study of encephalitis temporally associated with measles immunization⁶ reviewed 22 cases. Clinical, laboratory, and epidemiologic data were analyzed. The incidence of encephalitis within two months of vaccination was no greater than that expected for unimmunized children. Several cases were shown to be due to other agents. Subsequent surveillance of reactions yielded similar results.

The association of measles infection with the slow virus manifestation known as SSPE was unproven at the time measles vaccine was introduced. Discovery of the relationship prompted concern that the vaccine might also cause SSPE, possibly with greater frequency than natural measles virus.

Fortunately, the incidence of SSPE has declined significantly since the introduction of vaccine.

The Worldwide Challenge of Measles

To look at measles only on a national level is short sighted. Measles in developing countries is far more ravaging than in the United States. An estimated 1.5 million children die of measles and its complications each year. This toll is easier to comprehend when presented in another format. On the average, measles kills one child and disables another every 20 seconds.

In developing, heavily populated countries, measles is of greatest incidence in children under 2 years of age, with many children infected between 4 and 12 months of age. Case fatality rates are as high as 10% due to the combination of the young age of cases, malnutrition, and limited medical facilities.

Measles can, and should, be eradicated worldwide. We have the technical ability to eliminate measles. Ef-

forts to eradicate measles could easily be combined with control programs for polio, neonatal tetanus, pertussis, diphtheria and tuberculosis. These six preventable diseases kill 10 children with each passing minute and disable 10 more. Measles is responsible for one-third of these deaths and disabilities.

Intranasal measles vaccine is effective in a high proportion of children, even as young as seven months. It can be administered by unskilled persons. The cost is modest. Annual programs throughout the world should eradicate measles within a few years.

In excess of \$50 million per year is spent in the United States on the control of measles. Other countries spend substantial amounts on measles immunization. At some time, if not now, a worldwide eradication program for measles, polio, and other preventable diseases will be less expensive than ongoing national programs. The time will come when measles immunization can safely be discontinued, as was smallpox vaccination in 1971.

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Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PII. Brooklyn, N.Y.

Look alike and sound alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunder standings can result in the administration of a drug not intended by the prescriber. Awareness of such look alike and sound alike drug names can reduce potential errors. Category: Brand Name: Generic Name:

Dosage Forms:

Category:

Brand Name:
Generic Name:

Generic Name: Dosage Forms: CAPASTAT

Antituberculous agent Capastat Sulfate, Lilly Capreomycin

Powder for Injection

PHENOBARBITAL

Sedative & Hypnotic (barbiturate) Luminal, Winthrop Sedadrops, Merrell Dow Phenobarbital Tablets, Capsules, Drops, Liquid, Elixir, Injection CEPASTAT

Throat lozenge Cepastat, Merrell Dow phenol-menthol eucalyptus oil combination Lozenge

PENTOBARBITAL

Sedative & Hypnotic (barbiturate) Nembutal, Abbott

Pentobarbital Capsules, Elixir, Injection

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Adult Haemophilus Influenzae Meningitis

JOHN H. MADER, M.D.¹ JON T. MADER, M.D.²

AEMOPHILUS INFLUENZAE, an infrequent cause of meningitis in adults, currently accounts for only 1-3% of new cases. However, in both the adult and pediatric population, meningitis produced by this organism appears to be increasing in frequency. 1-2

The treatment of serious *H. influenzae* infections has changed over the past 20 years. During the 1960s ampicillin was the principal antibiotic used for treatment of *H. influenzae*. In 1972, the first ampicillin resistant isolate of *H. influenzae* was reported in Germany.³ Laboratory evaluation of this strain revealed that it produced Blactamase, an enzyme which inactivates penicillins, including ampicillin.⁴5

As more B-lactamase producing organisms were discovered, the initial treatment of serious *H. influenzae* infections changed to combination therapy using ampicillin and Chloramphenicol. If, however, the organism did not produce B-lactamase, ampicillin alone was utilized. Chloramphenicol alone was continued if the converse was true.

Currently, there appears to be increasing resistance to ampicillin.² One

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Abstract

Haemophilus influenzae is a rare cause of adult meningitis accounting for 1-3% of cases. Two cases of adult H. influenzae meningitis are reported. Both patients made uneventful and complete recoveries with the use of the third generation cephalosporin, cefotaxime.

study reported the incidence to be as high as 48%.7 The third generation cephalosporins have demonstrated excellent bactericidal activity against resistant H. influenzae and in their ability to cross the blood brain barrier.8-11 This increasing resistance of H. influenzae to ampicillin and more recently to Chloramphenicol, has altered the traditional therapy of this infection.1.12-15 We report two cases of adult H. influenzae meningitis treated with the third generation cephalosporin, cefotaxime.

Case Report 1

A 75-year-old comatose white woman was admitted to Reid Memorial Hospital (RMH), Richmond, Indiana. The patient had adult onset diabetes mellitus and rheumatoid arthritis. Feeling well the night before, she had played cards with friends until 11 p.m. The patient went to bed, and was awakened about 3 a.m. with severe right ear pain. After the pain subsided, she went back to sleep. The next morning she was not arousable, and was taken to RMH emergency room.

Two weeks prior to this admission, she had a superficial basal cell carcinoma removed from the right nasal labial fold. Upon her arrival at the emergency room, she was comatose; had a purulent exudate extruding from

both ears, marked nuchal rigidity, and a temperature of 39.5° C. Laboratory evaluations revealed a cloudy spinal fluid with a leukocyte count of 2700/mm³, red blood cell count of 120/mm³, protein of 168 g/dl, and glucose of 165 mg/dl. The peripheral glucose was 308 mg/dl. A CT scan of the head, performed with and without contrast media, showed evidence of air within the basal subarachnoid system surrounding the right petrous pyramid. Magnified images revealed a few small air-fluid levels within the right mastoid air cells (Figure).

While awaiting the spinal fluid culture results, the patient was presumptively treated with three grams of cefotaxime every six hours. The following day she was responsive. When the cultures proved positive for non B-lactamase producing H. influenzae, the patient was subsequently treated with a 14-day course of cefotaxime. Following an uneventful recovery, the patient was discharged to her home. To date she has experienced no sequela from her infection.

Case Report 2

A 58-year-old white man was evaluated in the RMH emergency room for fever, lethargy, and generalized myalgias. The patient had severe rheumatoid arthritis and had been treated with nonsteroidal anti-inflammatories, gold injections, and a left total knee arthroplasty. In addition to his rheumatoid arthritis, he was compromised with diabetes mellitus.

On physical exam he was acutely ill, delirious, and had marked nuchal rigidity. Chest x-ray revealed a left basilar infiltrate. The spinal fluid was cloudy with a leukocyte count of 140/mm³. The red cell count was 35/mm³, protein 110 g/dl, and the glucose was 12 mg/dl. A peripheral blood sugar was 236 mg/dl.

The Gram stain revealed Gram negative pleomorphic organisms. He was begun on parenteral cefotaxime, three grams every six hours.

Both the spinal fluid and blood cultures were positive for B-lactamase negative *H. influenzae*. He was subsequently treated with a 14-day course of cefotaxime and had an uneventful recovery. Three months later he developed a septic left knee. Culture of the joint fluid aspirate was positive for a B-lactamase negative *H. influenzae*. He was treated with a six-week course of parenteral cefotaxime. He responded well to therapy and was asymptomatic upon discharge. To date, he has experienced no recurrence of the septic arthritis or meningitis.

Discussion

Infections caused by *H influenzae* in adults are either becoming more common, or are being recognized more frequently. Serious and life-threaten ing infections secondary to *H. influenzae* include pneumonia, endocarditis, biliary-tract infections, and meningitis. *H. influenzae* accounts for 1-3% of adult meningitis. In these, predisposing factors have been identified in approximately 50%.

Thirty percent of the patients have antecedent or concurrent sinusitis, mastoiditis, otitis media, pharyngitis, epiglottitis, tracheobronchitis, or pneumonia. An additional 20% have experienced previous head trauma. In adult *H. influenzae* meningitis, spread from a local infection is the most frequent pathologic route to the central nervous system. In our series, one patient had concurrent pneumonia and one patient had suspected otitis media and mastoiditis.

The dramatic increase in ampicillin resistant isolates has altered the approach of therapy for suspected *H. influenzae* in both adults and children. ^{1,2} In serious *H. influenzae* infections, combination therapy using ampicillin and Chloramphenicol is initially advised. ³ One of these antibiotics is discontinued once the sensitivity results are known.



FIGURE: Computed tomography image on admission to RMH showing fluid densities and air-fluid levels in the right mastoid air cells.

In light of the increasing incidence of ampicillin resistant H influenzite isolates, Chloramphenicol appears to be the antibiotic of choice for initial therapy. However, H influenzate isolates are now emerging which are resistant to Chloramphenicol $^{(2)}$ and there also exists a risk of nonreversible aplastic anemia with Chloramphenicol therapy. This potential side effect of Chloramphenicol has led in vestigators to evaluate other less toxic antibiotics.

The third generation cephalosporins show excellent bacterictdal activity against both B-lactamase positive and negative isolates of H. influenzae These antibiotics also have proven effective against Streptococcus pneumonia, Neisseria meningitis and the enterobacteriaceae, which may also be isolated from adults with meningitis. The third generation cephalosporins reliably cross the blood brain barrier and are relatively non toxic. The third generation cephalosporins with the

greatest in retre activity against H. in fluenzar include cefotaxime, cefoperazone, ceftriaxone, ceftizoxime, and ceftazidime.

In adults, successful and complete recovery from H—nfluenzae meningitis is anticipated if appropriate antibiotic therapy is begun promptly. One clinical feature that has been identified with a poor prognostic course is coma at the time of admission. The presence of conditions that compromise host defenses makes this organism more difficult to treat. The mortality for H. influenzae meningitis varies from 10 to 30%. Seizures and psychosis have been reported in some adults who have clinically recovered from H. influenzae meningitis.

We are reporting two cases of *H. influenzue* meningitis in patients who had underlying diabetes mellitus and rheumatoid arthritis. One patient was admitted in a coma. Both patients made an uneventful and complete recovery with the use of cefetaxime, a third generation cephalosporin.

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Proceedings to be Published in January 1988

The proceedings of the 138th Annual Meeting of the House of Delegates, Indiana State Medical Association, will be published in the January 1988 issue of Indiana Medicine.

The Annual Meeting, during which Dr. John D. MacDougall of Beech Grove assumed the

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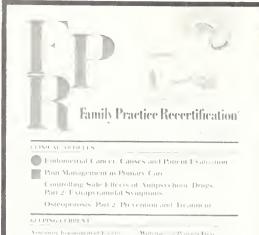
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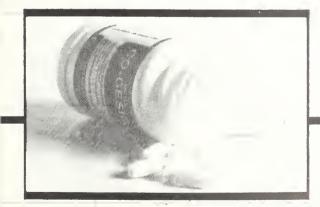
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Clostridium septicum: Spontaneous Myonecrosis

EVELYN BANKS, M.D.1 TED BLOCH, M.D.2 MICHAEL H. WHITTAKER, M.D.3

LOSTRIDIAL MYONECROSIS (gas gangrene) is a necrotizing infection of soft tissue which is usually associated with trauma. The causative organism is Clostridium perfringens in 80% of cases. Other clostridial species including Clostridium septicum. Clostridium histolyticum, Clostridium norm, and Clostridium fallax are also associated with myonecrosis of devascularized tissue. Spontaneous clostridial myonecrosis may occur in the absence of trauma. This entity was first described by Kimball and Ranson, in 1952, in a patient with spontaneous myonecrosis of the shoulder At autopsy, an occult adenocarcinoma of the cecum was found in association with C perfringens septicemia?

A case of spontaneous myonecrosis eaused by C septicion is described. Identification, treatment and prognosis of spontaneous myonecrosis is addressed

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Abstract

A case of spontaneous myonecrosis caused by Clostridium speticum is described. Identification, treatment and prognosis of this rapidly fatal disease is addressed.

Case Report

A 48-year-old white woman with Hodgkin's disease (Stage IV-B) was admitted with severe abdominal pain of three days duration. There was no associated nausea, vomiting, fevers or chills; however, the patient had one episode of diarrhea.

Admission laboratory studies are listed (Table 1). The patient died within eight hours of her hospital admission.

At post mortem examination, the skin overlying the trunk and extremities was crepitant with multiple bullae containing serosanguineous fluid (Figure 1). A gram stain of the fluid disclosed gram positive pleomorphic rods with subterminal spores.

Internal examination disclosed pericarditis, peritonitis, and necrotiz

ing enterocolitis involving the terminal ileum and cecum. Panlobar pneumonia and recurrent Hodgkin's disease was noted.

Materials and Methods

Antemortem blood cultures for aerobes and anaerobes were performed by standard laboratory techniques.

Post mortem gram stains and cultures were obtained by direct culture of liver, pericardium, pleural fluid, right psoas muscle, and peritoneal fluid with minimal air ex posure as well as aspiration of skin vesicles, transverse colon and gall bladder contents

Direct fluorescent antibody (DFA) staining of culture, soft tissue and bullae was performed using antibody against several Clostridium species (Burroughs Wellcome Co.) and examined for fluorescence.

Results

Gram stains of the tissues disclosed gram positive pleomorphic rods with subterminal spores (Figure 2) Antemortem and postmortem blood

Tes	t		
Hemoglol	bin (g	di	

Test	Results	Normal Values
Hemoglobin ig di	13	12 15
Hematoerit (%)	40	35-49
WBC (10° L)	20	4.5 11 5
Differential		
Segs 10/0!	29	
Bands (%)	7	
Lymphs +0/01	54	
Monos (%)	6	
Myelocytes	2	
Metamyelocytes	2	
Platelets (10°L)	18	150 450

TABLE 1

cultures were positive for *C. septicum*. Post mortem cultures of transverse colon contents, gallbladder contents, liver, pericardium, pleural fluid, right psoas muscle, peritoneal fluid and skin vesicles were also positive for *C. septicum*. *C. septicum* was also demonstrated by direct fluorescent antibody (Figure 3).

Discussion

The patient in this case represents spontaneous myonecrosis secondary to C. septicum in a patient with Hodgkin's disease. Spontaneous clostridial myonecrosis is usually associated with hematologic malignancies and solid neoplasms of the colon. In 1969, Alpern and Dowell called attention to the high association of C septicum sepsis and underlying malignancies 5 Koransky and associates reported a series of 59 patients with G septicum sepsis. Seventy-one percent (42/59 patients) had malignancy; half were hematologic and the others were solid neoplasms of the cecum 4

The clinical spectrum of *C septicum* sepsis and other clostridial bacteremia ranges from the asymptomatic patient with an incidental positive blood culture to profound septicemia associated with marked hypotension, fever, abdominal pain, intravascular hemolysis and death. In some cases, the patient will present with symptoms secondary to myonecrosis such as pain, discoloration of an extremity, swelling with tissue edema, subcutaneous emphysema and hemorrhagic bullae of the overlying skin in addition to a profound septic picture

Patients with hematologic malignancies and other neoplasms undergoing intensive chemotherapy constitute an important group of patients susceptible to spontaneous clostridial myonecrosis. It is important to recognize that other disease states such as cyclic neutropenia, and diopathic thrombocytopenia purpura have been associated with spontaneous clostridial myonecrosis. Neoplasms associated with Computational and the disease with Computational and the spontaneous clostridial myonecrosis. Neoplasms associated with Computational and the spontaneous clostridial myonecrosis.



FIGURE 1: Skin of the right thorax with multiple vesicles.



FIGURE 2: Gram's stain of vesicle fluid containing a gram positive rod with a subterminal spore (X 2.500).

C perfringen and C septicum are the most common clostridial species found in the human gastrointestinal tract, which accounts for their etiologic preponderance in spontaneous clostridial myonecrosis. Loss of mucosal integrity appears to trigger in vasion by C septicum and other clostridia. Leukemic and lymphoma

tous infiltrates may directly involve and alcerate the mucosa of the terminal fleum and cecum. Ulceration of large adenocarcinomas produce the same of fect, especially those located in the cecum. In addition, radiotherapy is known to cause intestinal injury resulting in mucosal ulceration and fistula formation. Chemotherapy itself dis-



FIGURE 3: Direct fluorescent antibody to C. septicum of Quadriceps femoris muscle reveals scattered fluorescent rods (X 4.280).

rupts the rapidiy proliferating epithelium, producing ulceration and impairs cellular and humoral defense. Also, we have seen cases with metastatic carcinoma to the cecum resulting in ulceration and clostridial sepsis.

Clostridial organisms rarely become pathogenic unless they enter damaged tissue. Evidence of some form of minor trauma at site of myonecrosis usually can be elicited. We have seen cases associated with trauma including intravenous punctures resulting in myonecrosis.

Diabetics also have an increased rate of clostridial myonecrosis presumably secondary to decreased oxygen tension which results from decreased perfusion of distal tissues.

Once ('septicum invades, it produces various exotoxins which cause breakdown of tissues, facilitating rapid spread of the infection. The four major ('septicum toxins are listed (Table

... The organism also produces several other biologically active agents which are beyond the scope of this text but are described elsewhere.

Clostria un septicum is not common-

ly identified because many laboratories do not identify clostridial isolates other than C—perfringens. It is a motile, obligately anaerobic, gram positive spore-forming bacillus which can be readily isolated on a variety of solid

anaerobic media including anaerobic blood agar, phenylethyl alcohol agar and egg yolk agar Materials for gram stain and culture may be obtained by tissue aspiration or bullae aspiration with minimal air exposure. The presence of gram positive bacilli with squared ends is suggestive of clostridium spp. Morphologically, *C. septicum* can be recognized as a swarming, betahemolytic colony with a serpentine edge in anaerobic blood agar (*Table 4*).

If isolated in pure culture, the organism can spread sufficiently in 24 to 48 hours to cover the entire surface of a plate and give the appearance of "no growth." Close inspection will disclose a dull appearance to a normally shiny agar surface. Key biochemical features of C septicum by conventional tubed methods are the fermentation of glucose, lactose, maltose, mannose and cellobiose, hydrolysis of esculin and gelatin and formation of a curd in milk. Additional biochemical characteristics of C septicum are listed (Table 5). Volatile metabolic products detected by gas chromatography are acetic and butyric acid. C. septicum can also be demonstrated by direct fluorescent antibody staining in tissue sections.

 ${\small \begin{array}{c} {\rm TABLE} \ 2 \\ {\rm Malignancies} \ {\rm Associated} \ {\rm with} \ {\it Clostridium} \ {\it septicum} \end{array}}$

Malignancy	# of Cases	Reference
Leukemia, Lymphoma	36	3,8.9,10,11.13,14.15,17, 21,24,25,26,28
Adults (>18 years old)	23	
Children (<18 years old)	13	
Intestinal Malignancies	31	3,7,12,14,16,18,19,20,21, 22,23,24,25,27,28,29
Cecal Adenocarcinomas	13	
Rectal Adenocarcinomas (Not otherwise specified)	10	
Sigmoid Adenocarcinomas	2	
Colon Adenocarcinomas	3	
Gastric Adenocarcinomas	2	
Metastatic Tumors to Intestine	1	
Carcinoma of Breast	2	3, 14
Reticulum Cell Sarcomas	2	3, 27
Carcinoma of Larynx	1	3

Obviously, C. septicum sepsis and myonecrosis are rapidly progressive and result in death if appropriate treat ment is not instituted rapidly. The key to survival is a combination of surgery and antibodies. As in traumatic clostridial infection which may require amputation or disarticulation, surgical debridement of all devitalized tissue must be performed as soon as the diagnosis is made. Antibiotics should be initiated at the same time. Penicillin is the drug of choice and should be given in a dosage of 20 million units per day. Other antibiotics such as clindamycin, carbenecillin, ticarcillin, cephalosporins, Chloramphenicol, metronidazole and vancomycin are reasonable alternative drugs.32

With clinical symptoms suggesting intraabdominal disease such as abdominal pain, or rigidity, a lapartomy should be performed to evaluate the il eocecal valve, terminal ileum and cecum. Some patients show evidence of intestinal perforation requiring a concomitant right hemicolectomy with their extensive debridement.

Hyperbaric oxygen therapy has been proposed as another method of treatment. For patients with early lesions near a facility with a hyperbaric chamber, this therapy may be of benefit. Dramatic responses have been reported in some series; however, oxygen tension levels necessary to be bacteriocidal for clostridia cannot be reached when devitalized tissue is present.³³ More importantly, randomized studies have shown no benefit.³⁴

Antitoxins are available against toxins produced by various clostridial species, usually in the form of concentrated immunoglobulins. Since the clinical picture in spontaneous clostridial myonecrosis is similar with all species of toxin forming clostridia, polyvalent antitoxins are used. Presently, there is no evidence of efficacy in treatment of *C. septicum*.

The prognosis for patients with spontaneous clostridial myonecrosis without treatment is uniformly fatal. With the institution of antibiotics

TABLE 3
Toxins of Clostridium septicum*

Toxin	Characteristics
Alpha Toxin	Hemolytic for human, sheep and rabbit rbe's but not horse or GP rbe's, necrotizing lethal for G.P.s.
Beta Toxin	Deoxyribonuclease: destroys leukocyte nuclei.
Gamma Toxin	Hyaluronidase
Delta Toxin	Oxygen labile hemolysin, inactivated by antistreptolysin O serum

TABLE 4 C. septicum—Morphologic Characteristics

Morphology:	Gram positive rod (0.8 x 3.5 um or pleomor phic) longer and thinner cells may be found; citron forms common. Motile, Subterminal
Optimum temp:	spores Sometimes in long chains of cells Grow optimally at 40°C, grow well at 44°C:
Colonies on 38h BAP	do not grow at 46°C. 2.5 mm diameter, sl. raised, semitranslucent, gray, pregular or rhizoid, swarm.

TABLE 5 C. septicum—Biochemical Characteristics

GLC: Acetic and butyric acids produced (Gas Liquid Chromatography)

Indole negative

Esculin hydrolysis positive

Catalase, lecithinase, lipase negative

Growth enhanced on bile agar

Starch hydrolysis negative

Digestion of milk variable

DNAse positive

Gelatin hydrolysis positive

Ferments glucose, lactose, maltose

Does not ferment mannitol, sucrose, salicin, rhamnose

alone. Caya reported a 57.1% survival rate from septicemia. Kaiser found only a 22% survival rate treated with surgery and antibiotics. Both surgical intervention as well as antibiotics should be instituted as soon as possible in patients with an acute abdomen and/or myonecrosis of an extremity.

Most importantly, however, the diagnosis of spontaneous clostridial myonecrosis must be entertained and

treatment started promptly. Once a patient has recovered, evaluation for an occult malignancy, especially one involving the terminal ileum or proximal colon, should be initiated.

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Aeromonas hydrophila Wound Infection Associated with Myonecrosis and Gas Gangrene

TED BLOCH, M.D.¹
MARK HOCHSTETLER, M.D.²
BRUCE F. WALLER, M.D.³
STEVEN A. CLARK, M.D.⁴

A continuous and patients are all all trees. The patients are all trees and from soil or water. It is a common pathogen of salamanders and frogs. Scattered reports have implicated this organism as a pathogen in humans. Most of these patients suffer from debilitating diseases such as renal failure. I liver disease, 1,2,2,10,11,15 diabetes mellitus, 16 hematologic disorders, 1,2,8,10,11,16 carcinomas, 2,8,11,16 and sarcomas, 2,8,11,16 and sarcomas, 2,8,11,16 and sarcomas.

Recent reports have revealed that this organism is pathogenic in otherwise healthy individuals and may produce severe necrotizing infections requiring radical surgery for control of the process. 3,6,7,9,14 A. hydrophila myonecrosis with gas gangrene developed in a 19-year-old boy after

Abstract

Aeromonas hydrophila associated myonecrosis with gas gangrene developed in a 19-year-old boy after he sustained a laceration of the lateral right knee. Despite agressive therapy, he died. It is important to differentiate this organism from others that produce myonecrosis and gas gangrene, i.e., beta hemolytic streptococci and clostridiae as the therapy differs.

sustaining a laceration of the knee while swimming. Despite aggressive medical and surgical therapy, he died. Implications for therapy of *A. hydrophila* wound infections are

discussed. The knowledge that *A. hydrophila* can produce myonecrosis is clinically important because the therapy is different.

Case Report

A 19-year-old boy lacerated his lateral right knee while wading in a river. He was brought to a local hospital where the wound was irrigated, debrided and sutured and he was given oral penicillin. Swelling of the knee with pain occurred that evening, and fever and further swelling developed the next day. He returned to the local hospital where the wound was opened and a large hematoma drained. His fever abated, but the swelling and pain continued. He return-

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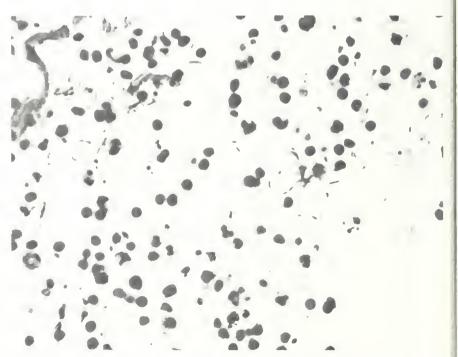


FIGURE: Scattered gram negative baciHi and neutrophils in the fascia of the right thigh consistent with Aeromonas hydrophila (X630 Brown-Brenn stain).

TABLE
Traumatic Aeromonas Hydrophila Wound Infections Associated with Myonecrosis

SOURCE	AGE	SEX	TYPE OF ACCIDENT	ANTIBIOTICS	CULTURE RESULTS	SURGICAL TREATMENT
Smith	9	F	Laceration of foot (myonecrosis and gas)	Penicillin Kanamycin		Below the knee amputation (survival)
Smith	23	M	Motorcycle Accident (myonecrosis)	Penicillin Cephalothin		Syme's amputation (survival)
Deepe & Coonrad	16	M	Motorcycle accident (myonecrosis)	Cephalothin Gentamicin Penicillin Clindamycin		Below the knee amputation (survival)
Heckerling et al.	88	F	Laceration of left thumb on fishbone (myonecrosis & gas)	Penicillin Oxacillin	J	Disarticulation of left upper extremity (Death)
Levin	44	M	Laceration of thigh in scuba accident (myonecrosis & gas)	Penicillin Erythromycin Kanamycin	J 1	Fasciotomy (survival)
Geller	17	M	Laceration of left hand (myonecrosis & gas)	Penicillin Clindamycin Tobramycin	- I Source Process	I & D (survival)
Bloch et al.	19	M	Laceration of knee while swimming (myonecrosis & gas)	Penicillin Piperacillin	0 1	Fasciotomy (Death)

ed to the local hospital after three days because of worsening symptoms. Physical examination revealed tachycardia and hypotension. The entire right leg was inflamed.

On admission, the hemoglobin was 17.5 gm/dl; the white-cell count was 4,400, with an automated differential count of 48% neutrophils, 42% lymphocytes, 4% monocytes, and 6% band forms. An electrocardiogram demonstrated atrial flutter.

Radiographs of the right knee revealed subcutaneous emphysema. He was taken to the operating room where incision and debridement of the fascia was performed. During the procedure a large amount of foul-smelling, serous yellow-brown discharge was encountered. Following surgery, his condition continued to deteriorate and he was transferred to Indiana University Hospital. Upon arrival his temperature was 42°C. He was hypotensive. The hemoglobin was 11.7 gm/dl; the corrected white-cell count was 5,200, with an automated differential count of 16% neutrophils, 75% lymphocytes, 5% monocytes, 4% band forms and 41 nucleated red blood cells per 100 white blood cells. The platelet count was 22,500.

Shortly after arrival, he progressed to complete cardiac arrest and could not be resuscitated.

At autopsy, numerous two to six cen-

timeter incisions were present over the medial and lateral aspects of the right lower extremity from the previous debridement. The incisions contained light brown serous fluid. Gas could be expressed from the underlying musculature. Examination of the organs revealed cardiac dilation, hepatomegaly with softening and splenomegaly. There was extensive muscle necrosis involving the extensor and flexor compartments of the foot, leg and thigh with extension into the right Psoas Major.

Microscopic examination revealed congestion of the lungs, liver and spleen. Cerebral anoxic changes and hepatic centrilobular necrosis were present. Numerous gram negative bacilli and clusters of neutrophils were present throughout the fascia, muscle and subcutaneous tissues of the right leg (Figure).

A. hydrophila grew from premortem aerobic cultures of blood and necrotic muscle. Anaerobic cultures were negative. Post mortem cultures of necrotic muscle grew A. hydrophila, Citrobacter freundii and Edwardsiella tarda. Anaerobic cultures produced rare Clostridium perfringens. Using a microtiter minimal inhibitory concentration technique, the organism was sensitive to tetracycline, Chloramphenicol, gentamicin, tobramycin, amikacin, cephalothin, cefamandol, cefoxitin, cefotaxime, moxalactam, mezlocillin, and piperacillin, and resistant to ampicillin and carbenicillin.

Discussion

A. hydrophila is becoming increasingly recognized as a pathogen in the immunocompromised host. Von Graevenitz and Mensch described four types of infection associated with this organism: cellulitis or wound infection after water exposure, an acute diarrheal illness, sepsis in immunocompromised hosts and miscellaneous infection such as urinary tract infections. The occurrence of significant wound infections in association with water sports is poorly recognized. More importantly, the occurrence myonecrosis with A. hydrophila has been rarely described.

Myonecrosis and gas gangrene is usually produced by Clostridium species, particularly C. perfringens. Nonclostridial gas-forming infections are seen with anaerobic streptococci, Bacteroides species and some aerobic coliform bacilli. Gas production by aerobic coliform is seen almost exclusively in diabetic patients. A. hydrophila has been reported to cause myonecrosis in 10 previous cases, six of which were traumatic wound infections (Table).

Five reports describe gas production with myonecrosis. The first case described by Smith.14 resulted in myonecrosis and gas gangrene in a 9-year-old girl with a laceration of the foot which required a below-the-knee amputation for control. Heckerling and associates7 described a severe necrotizing infection with myonecrosis and gas gangrene in an 88-year-old woman with a thumb laceration. Despite aggressive treatment including shoulder disarticulation, the patient succumbed. Levin⁹ described myonecrosis and gas production in a 44-year-old man who was injured while diving. Fasciotomy and antibiotics were necessary to prevent necrosis of the entire extremity. Geller and associates6 described a hand infection with gas production that required debridement for control. The present case also showed myonecrosis and gas production in a 19-year-old boy who was injured while swimming. Two cases grew only A. hydrophila. Three cases showed a synergistic growth of organism including C. perfringens, E. tarda, C. freundii, and Klebseilla pneumoniae. The role of C. perfringens in gas production in the two cases where it was isolated is not clear. Only rare colonies were grown from muscle in the present case.

A. hydrophila produced myonecrosis and gas gangrene in a 19-year-old boy after minor trauma while swimming. The extensive necrosis seen in this patient may be due to exotoxins with proteolytic and lecithinase activities isolated for A. hydrophila. 17 This case illustrates the importance of including A. hydrophila among the causes of post traumatic myonecrosis associated with water environments. Unlike C. perfringens, organisms of the genus Aeromonas are resistant to penicillin; aminoglycosides, cephalosporins, and the new beta-lactam antibiotics demonstrate excellent activity against various clinical isolates.5 The emergency room physician, surgeon and clinical pathologist must work together to identify and properly treat A. hydrophila wound infections.

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Brief Summary. Consult the package literature for prescribing information. Indications and Usage: Kellete Tablets (esphaleon, Disare indicated for the treatment of the following infections when caused by susceptible strams of the designated microorganisms:

Sceptific status of the designator influence in the designators. Respiratory fact infections caused by *Streptococcus pneumoniae* and group A β-hemolytic streptococci (Penicillin is the usual drug of choice in the freatment and prevention of streptococcal infections, choice in the freatment and prevention in streptococal intecuols, including the prophylaxs of rheumatic fever Keffel is generally effective in the eradication of streptococal from the nasopharynx, howeve substartial data establishing the efficacy of Keffer in the subsequent prevention of rheumatic fever are not available at present). Offits media due to S pneumonae, Haemophilus influenzae, staphylo-

coco, streptococo, and *Neisseria catarrhatis*Skin and skin structure infections caused by staphylococo and/or

strentococci

streplococci
Bone infections caused by staphylococci and/or Proteus mirabilis
Gentournary tract infections, including acute prostatitis, caused by
Eschericha coli, P mirabilis, and Klebsiella sp.
Note — Culture and susceptibility tests should be initiated prior to and
during therapy. Renal function studies should be performed when indicated
Contraindications. Keller is contraindicated in patients with known allergy
to the cephalosporing group of artibiotics.

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SERIOUS ACLITE HYPERSENSITIVITY REACTIONS MAY REQUIRE EPINEPHRINE AND IT EMERGENCY MEASURES

There is some clinical and laboratory evidence of partial cross-allergen icity of the penicilins and the cephalosporins. Patients have been reported to have had severe reactions (including anaphylaxis) to both drugs. Any patient who has demonstrated some form of altergy, particularly to

drugs, should receive antibiotics cautiously No exception should be made with regard to Ketlet

Pseudomembranous colitis has been reported with virtually all broadresegoriem to a rous comis has been reported with virtually all objective matholics (including macrolides, semisynthetic pericillins, and esphalosporns), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colifis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics afters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of arithbotic-associated colifs.

Mild cases of pseudomembranous colitis usually respond to drug dis-Mild cases of pseudomembranous colitis usually respond to drug dis-continuance alone in moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, elec-trolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral varicomyon is the drug of choice for arithotic-associated pseudomembranous collist produced by Cattlicile. Other causes of colitis should be ruied out. Usage in Pregnancy—Salety of this product for use during pregnancy has the best of the control of the control

Usage in Pregnancy—Salety of this product for use during pregnancy in not been established

Preautions: General—Patients should be followed carefully so that any side effects or unusual mainfestations of druig diosyncrasy may be detect if an allergic reaction to Kette occurs, the drug should be discontinued and the patient reated with the usual agents (eg, epinephrine or other pressor amines, antihistamines, or corticosteroids).

Prolonged use of Kettel may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken. Postive direct Coombis tests have been reported during treatment with the cerbalisation antihotics in hematining studies or in Transfusion.

Positive direct Coombis fests have been reported during freatment win the cephalosporin artibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombis festing of newborns whose mothers have received cephalosporin artibiotics before parturition, it should be recognized that a positive Coombis fest may be due to the drug. Keflet should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboration is turilies should be made because safe discance may be lower.

and laboratory studies should be made because sale dosage may be lower than that usually recommended

Indicated surgical procedures should be performed in conjunction with

As a result of administration of Kellet, a false-positive reaction for glu-

antibiolic therapy
As a result of administration of Kellel, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape* (Glucose Enzymatio Test Strip, USP Lilly).

Broad-spectrum antibiolics should be prescribed with caution in individuals with a history of gastrometrial disease, particularly collids.

Usage in Pregnancy—Pregnancy Category B—The daily oral administration of cephalexin to rats in dioses of 250 or 500 mg/kg prior to and during pregnancy, or to rats and mice during the period of organopeness only, the adverse effect on fertility, letal viability, letal weight, or fitter size. Note that it sately of cephalexin during pregnancy in humans has not been established. Cephalexin showed no enhanced toxicity in wearling and newborn rats as compared with adult animals. Nevertheless, because the studies in humans cannot rule out the possibility of harm, Keflel should be used during the possibility of harm, Keflel should be used during the activity of the presence of the studies in humans cannot rule out the possibility of harm, Keflel should be used during the administration Caution should be eversues the flort grached a maximum level of 4 µg/then decreased gradually, and had disappeared 8 hours after administration Caution should be eversued when Keflet is administred to a nursing wom-Adverse Reactions: Gastrointestrial—Symptoms of pseudomembranous colfits may appear either during or after antibiotic treatment. Nausea and vorniting have been reported rately. The most frequent side effect has been diarrhea. It was very rarely severe enough to warrant cessation of therapy. Dysepsiss and abdominal pain have also occurred As with some pericillins and some other cephalosporns, transient hepatitis and choles-latic jaundice have been reported rately.

Hypersensitivity—Allergic reactions in the form of rash, urficaria, ango

penicilins and some other cephalospornis, transierii nepalius and ubestatic jaundice have been reported rarely

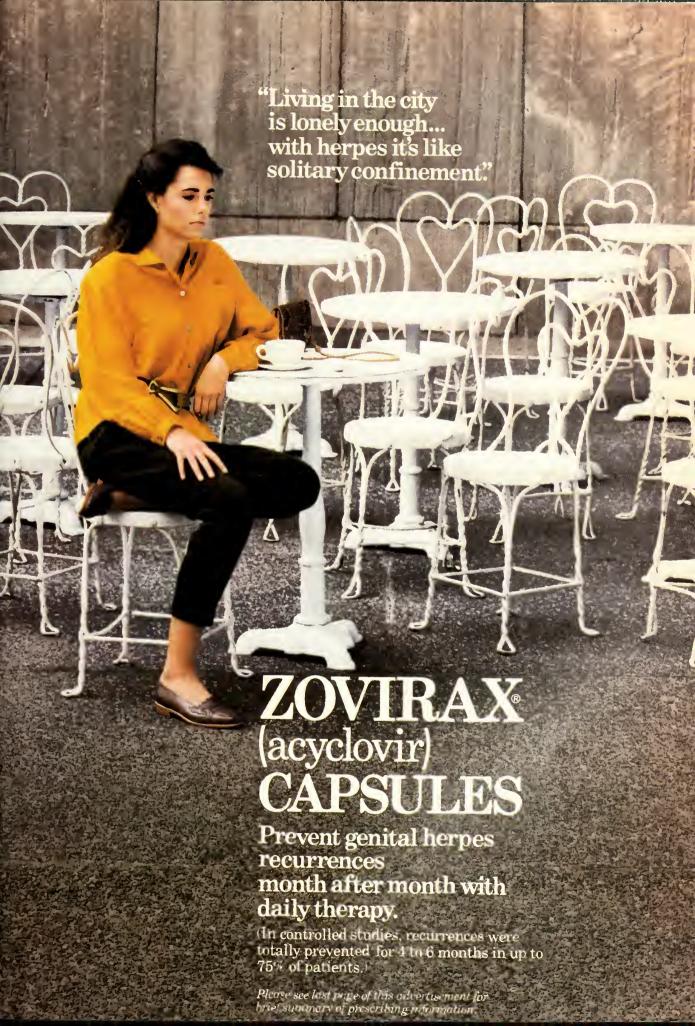
Hypersensitivity— Allergic reactions in the form of rash, urficana, ango edema, and, rarely erythema multiforme, Stevens-Johnson Syndrome, or toxic epidermal necrolysis have been observed. These reactions usually sisted upon discontinuation of the drug. Anaphylaxis has also been reporte. Other reactions have included genital and anal pruritus, genital monikis vaginnis and vaginal discharge, duziness, tatique, and headache Reversibil intersitial nephritis has been reported rarely Eosnophilia, neutropena, thrombocytopenia, and slight elevations in SGOT and SGPT have been reported.

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ZOVIRAX® (acyclovir) CAPSULES

Help free your patients from recurrences.

Daily therapy

Coping with genital herpes is rarely easy. For some, the worst part is the pain and discomfort of frequent attacks—month after month, year after year. For others, the emotional burden presents a more difficult problem, leading to social isolation, anxiety, and diminished self-esteem.

Prevent or reduce recurrences

Although your patients have to live with herpes, they shouldn't have to suffer. Daily therapy with ZOVIRAX CAPSULES can help free them from the cycle of recurrent genital herpes. For many, one capsule three times a day can suppress recurrences completely while on therapy.

Generally well tolerated

Daily therapy with ZOVIRA CAPSULES is generally we tolerated. The most frequen adverse reactions reported during clinical trials were headache, diarrhea, nausea/vomiting, vertigo, and arthralgia.

The physical and emotion difficulties posed by genital herpes are unique for each patient. The frequency and severity of recurrent episode as well as the emotional impact of the disease, should be considered when selecting daily therapy with ZOVIRAL CAPSULES.

Please see brief summary of prescribing information on next page



Prevent recurrences nonth after month

ZOVIRAX acyclovir) CAPSULES

NDICATIONS AND USAGE: Zovirax Capsules re indicated for the treatment of initial episodes and the management of recurrent episodes of genital herpes in certain patients.

The severity of disease is variable depending upon the immune status of the patient, the frequency and duration of episodes, and the degree of utaneous or systemic involvement. These factors should determine patient management, which may nclude symptomatic support and counseling only. or the institution of specific therapy. The physical, motional and psycho-social difficulties posed hy herpes infections as well as the degree of debilitation, particularly in immunocompromised patients, are unique for each patient, and the physician should determine therapeutic alternatives based on his or her understanding of the individual patient's needs. Thus Zovirax Capsules are not appropriate in treating all genital herpes infections. The following guidelines may be useful in weighing the henefit risk considerations in specific disease categories

First Episodes (primary and nonprimary infeccommonly known as initial genital herpes):

Double-blind, placebo-controlled studies have demonstrated that orally administered Zovirax significantly reduced the duration of acute infection detection of virus in lesions by tissue culture) and lesion healing. The duration of pain and new lesion formation was decreased in some patient groups. The promptness of initiation of therapy and/or the patient's prior exposure to Herpes simplex virus may influence the degree of benefit from therapy. Patients with mild disease may derive less benefit than those with more severe episodes. In patients with extremely severe episodes, in which prostration, central nervous system involvement, urinary retention or inability to take oral medication require hospitalization and more aggressive management, therapy may be best initiated with intravenous Zovirax

Recurrent Episodes:

Double-blind, placebo-controlled studies in patients with frequent recurrences (6 or more episodes per year) have shown that Zovirax Capsules given for 4 to 6 months prevented or reduced the given for 4 to 6 months prevented or reduced the frequency and or severity of recurrences in greater than 95% of patients. Clinical recurrences were prevented in 40 to 75% of patients. Some patients experienced increased severity of the first episode following cessation of therapy; the severity of subsequent episodes and the effect on the natural history of the disease are still under study.

The safety and efficacy of orally administered acyclovir in the suppression of frequent episodes of central herries have been established only for up to

agrowth fir the suppression of frequent episodes of genital herpes have been established only for up to 6 months. Chronic suppressive therapy is most appropriate when, in the judgement of the physi-cian, the benefits of such a regimen outweigh known or potential adverse effects. In general, Zovirax Capsules should not be used for the suppression of recurrent disease in mildly affected patients. Unanswered questions concerning the human relevance of *in vitro* mutagenicity studies and reproductive toxicity studies in animals given very high doses of acyclovir for short periods (see Carcinogenesis, Mutagenesis, Impairment of Fertility) should be horne in mind when designing long-term management for individual patients. Discussion of these issues with patients will provide them the opportunity to weigh the potential for toxicity against the severity of their disease. Thus, this regimen should be considered only for appropriate patients and only for six months until the results of ongoing studies allow a more precise evaluation of the benefit/risk assessment of prolonged therapy

Limited studies have shown that there are certain patients for whom intermittent short-term treatment of recurrent episodes is effective. This approach may be more appropriate than a sup-

pressive regimen in patients with infrequent

Immunocompromised patients with recurrent herpes infections can be treated with either intermittent or chronic suppressive therapy. Clinically significant resistance, although rare, is more likely to be seen with prolonged or repeated therapy in severely immunocompromised patients with active

CONTRAINDICATIONS: Zovirax Capsules are contraindicated for patients who develop hypersensitivity or intolerance to the components of the formulation.

WARNINGS: Zovirax Capsules are intended for oral ingestion only.

PRECAUTIONS: General: Zovirax has caused decreased spermatogenesis at high doses in some animals and mutagenesis in some acute studies at high concentrations of drug (see PRECAUTIONS Carcinogenesis, Mutagenesis, Impairment of Fertility). The recommended dosage and length of treatment should not be exceeded (see DOSAGE AND ADMINISTRATION).

Exposure of Herpes simplex isolates to acyclovir in vitro can lead to the emergence of less sensitive viruses. The possibility of the appearance of less sensitive viruses in man must be borne in mind when treating patients. The relationship between the *in vitro* sensitivity of Herpes simplex virus to acyclovir and clinical response to therapy has yet to

be established

Because of the possibility that less sensitive virus may be selected in patients who are receiving acyclovir, all patients should be advised to take particular care to avoid potential transmission of virus if active lesions are present while they are on therapy. In severely immunocompromised patients, the physician should be aware that prolonged or repeated courses of acyclovir may result in selection of resistant viruses which may not fully respond to continued acyclovir therapy

Drug Interactions: Co-administration of probenecid with intravenous acyclovir has been shown to increase the mean half-life and the area under the concentration-time curve. Urinary excretion and renal clearance were correspondingly reduced

Carcinogenesis, Mutagenesis, Impairment of Fertility: Acyclovir was tested in lifetime bioassays in rats and mice at single daily doses of 50, 150 and 450 mg kg given hy gavage. There was no statistically significant difference in the incidence of tumors between treated and control animals, nor did acyclovir shorten the latency of tumors. In 2 in vitro cell transformation assays, used to provide preliminary assessment of potential oncogenicity in advance of these more definitive life-time bioassays in rodents, conflicting results were obtained Acyclovir was positive at the highest dose used in one system and the resulting morphologically transformed cells formed tumors when inoculated into immunosuppressed, syngeneic, weanling mice. Acyclovir was negative in another transformation

system considered less sensitive.

In acute studies, there was an increase, not statistically significant, in the incidence of chromosomal damage at maximum tolerated parenteral doses of 100 mg kg acyclovir in rats but not Chinese hamsters; higher doses of 500 and 1000 mg kg were clastogenic in Chinese hamsters. In addition, no activity was found after 5 days dosing in a dominant lethal study in mice. In 6 of 11 microbial and mammalian cell assays, no evidence of mutagenicity was observed. At 3 loci in a Chinese hamster ovary cell line, the results were inconclusive. In 2 mammalian cell assays (human lymphocytes and L5178Y mouse lymphoma cells *in vitro*), positive responses for mutagenicity and chromosomal damage occurred, but only at concentrations at least 400 times the

acyclovir plasma levels achieved in man.
Acyclovir has not been shown to impair fertility
or reproduction in mice (450 mg/kg/day, p.o.) or in rats (25 mg/kg/day, s.c.). At 50 mg/kg/day s.c. in the rat, there was a statistically significant increase in post-implantation loss, but no concomitant decrease in litter size. In female rabbits treated subcutaneously with acyclovir subsequent to mating, there was a statistically significant decrease in implantasize at a dose of 50 mg/kg/day. No effect upon implantation efficiency was observed when the same dose was administered intravenously. In a rat peri- and postnatal study at 50 mg/kg/day s.c., there was a statistically significant decrease in the group mean numbers of corpora lutea, total implantation sites and live fetuses in the F_1 generation. Although not statistically significant, there was also a dose related decrease in group mean numbers of live fetuses and implantation sites at 12.5 mg/kg/day and 25 mg/kg/day, s.c. The intravenous administra-tion of 100 mg/kg/day, a dose known to cause obstructive nephropathy in rabbits, caused a significant increase in fetal resorptions and a corresponding decrease in litter size. However, at a

maximum tolerated intravenous dose of 50 mg/kg/ day in rabbits, there were no drug-related reproduc tive effects

Intraperitoneal doses of 320 or 80 mg kg day acyclovir given to rats for 1 and 6 months, respec tively, caused testicular atrophy. Testicular atrophy was persistent through the 4-week postdose recovery phase after 320 mg kg day, some evidence of recovery of sperm production was evident 30 days post-dose. Intravenous doses of 100 and 200 mg/kg/day dose. Intravential doss for 31 days caused asperma-togenesis. Testicles were normal in dogs given 50 mg/kg/day, i.v. for one month.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Acyclovir was not teratogenic in the mouse (450 mg/kg/day, p.o.), rat (50 mg/kg/day, s.c.) or rabbit (50 mg kg/day, s.c. and i.v.) There are no adequate and well-controlled studies in pregnant women. Acyclovir should not be used during pregnancy unless the potential benefit justifies the potential risk to the fetus. Although acyclovir was not teratogenic in animal studies, the drug's potential for causing chromosome breaks at high concentration should be taken into consideration in making this determination

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Zovirax is administered to a nursing woman. In nursing mothers, consideration should be given to not using acyclovir treatment or discontinuing hreastfeeding

Pediatric Use: Safety and effectiveness in children have not been established

ADVERSE REACTIONS - Short-Term Administration: The most frequent adverse reactions reported during clinical trials were nausea and/or vomiting in 8 of 298 patient treatments (2.7%) and headache in 2 of 298 (0.6%). Less frequent adverse reactions, each of which occurred in 1 of 298 patient treatments (0.3%), included diarrhea, dizziness, anorexia, fatigue, edema, skin rash, leg pain, inguinal adenopathy, medication taste and sore

Long-Term Administration: The most frequent therapy for 3 to 6 months were headache in 33 of 251 patients (13.1%), diarrhea in 22 of 251 (8.8%), nausea and/or voniting in 20 of 251 (8.0%), vertigo in 9 of 251 (3.6%), and arthralgia in 9 of 251 (3.6%). Less frequent adverse reactions, each of which occurred in less than 3% of the 251 patients (see number of natients in parentheses), included skin occurred in less than 3% of the 251 patients (see number of patients in parentheses), included skin rash (7), insomnia (4), fatigue (7), fever (4), palpitations (1), sore throat (2), superficial thrombophlebits (1), muscle cramps (2), pars plantis (1), menstrual abnormality (4), acne (3), lymphadenopatics (3), and (3), and (3), and (3). thy (2), irritability (1), accelerated hair loss (1), and depression (1)

DOSAGE AND ADMINISTRATION: Treatment of initial genital herpes: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 10 days (total 50 capsules

Chronic suppressive therapy for recurrent disease: One 200 mg capsule 3 times daily for up to 6 months. Some patients may require more drug. up to one 200 mg capsule 5 times daily for up to

Intermittent Therapy: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 5 days (total 25 capsules). Therapy should be initiated at the earliest sign or symptom (prodrome) of recurrence.

Patients With Acute or Chronic Renal

Impairment: One 200 mg capsule every 12 hours is recommended for patients with creatinine clearance ≤ 10 ml/min/1.73 m².

HOW SUPPLIED: Zovirax Capsules (blue, opaque) containing 200 mg acyclovir and printed with "Wellcome ZOVIRAX 200" - Bottles of 100 (NDC-0081-0991-55) and unit dose pack of 100 (NDC-0081-0991-56).

Store at 15'-30'C (59 -86'F) and protect from light.

In controlled studies, recurrences were totally prevented for 4 to 6 months in up to 75% of patients.

Burroughs Wellcome Co., Research Triangle Park, North Carolina 27709



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MEDICARE: About That 39% Increase

Guest Editorial

JOSEPH F. BOYLE, M.D. Executive Vice President American Society of Internal Medicine

N SEPTEMBER, the Reagan Administration announced a widely reported and commented upon 39% increase for the premiums that Medicare beneficiaries will have to pay next year for Part B coverage, the supplemental part of the program that covers physician services: services of certain non-physician health care professionals; medical devices and clinical laboratory services. This announced increase - from \$17.90 to \$24.80 per month-is about \$3 higher than originally anticipated and means that Medicare beneficiaries will have to pay nearly \$300 in premiums in 1988, a particularly severe burden for low-income elderly Americans that no one can be happy about.

But blaming physicians and the fees they're charging for this increase, which many are doing, doesn't get to the root of the problem—or lead the way toward effective solutions. Let's stop the finger pointing long enough to examine the real reasons for this increase, hefore Congress and others make uninformed, knee-jerk decisions that could severely damage the Medicare program and the people it

Dr. Boyle is a past president of the American Medical Association. He was in the private practice of internal medicine for 30 years.

serves. As Mark Twain once said, "Get the facts first; you can distort them later."

FACT: Nearly one-half of the premium increase is because Part B premiums have been artificially held down for the past two years. In 1986, there was no increase in the Medicare Part B premium. In 1987, according to the Health Care Financing Administration (HCFA) - the agency that administers the Medicare program - premiums were set at \$2.86 below what was needed to keep up with program expenditures. By digging into the reserves to cover the shortfalls in premium revenue the last two years, it isn't surprising that the government must now raise the Medicare Part B premium an "unprecedented" amount because it chose not to raise premiums by smaller amounts over a period of three years.

FACT: The other half of the premium increase is due to increases in Part B expenditures, but physician fees have practically nothing to do with this increase. According to HCFA, Medicare Part B program expenditures have risen 20% in the previous 12 months ending June 30, 1987. Termed by a top HCFA official as a "crude analysis" and one that may not be substantiated for another 9-12 months, here is the breakdown HCFA is using of why this increase occurred:

2% = MORE MEDICARE BENEFI-Claries than before, the result of an aging population.

2% = SPEEDIER PAYMENT OF CLAIMS, as legislated by Congress last year, so that Medicare beneficiaries

would no longer have to wait up to six weeks to be reimbursed from the program. Result: Medicare paid more claims in this 12-month period than before

7% = MEDICARE PAYMENT UP-DATES enacted by Congress for physician services, the first payment update in nearly four years for the vast majority of physicians since Congress froze payments from 1984-87 at 1983 levels. It should be explained, however, that this payment update had nothing to do with what physicians actually charged for their services—still under tight price controls today. This payment update affects only what Medicare will pay for services—the so-called "allowable charge."

9% = MORE SERVICES PROVID-ED, usually categorized as an increase in utilization, volume or intensity. This factor — which represents less than half the increase in program expenditures - is the only one that is attributable at least in part to physicians since they order most (but not all) medical services for their patients. The problem here is that no one knows how much of this increase is due to improvements in patient care (such as new technology or better access) or to other factors such as the growing numbers of physicians, the shifting of services from hospitals to doctors, or to services that could appropriately be reduced without causing harm to patients. This increase is and quite rightly should be a major concern of the medical profession, Congress, the Administration and others

When the above factors are taken together, it shows that nearly half of the 39% premium increase is for a

"catch up" in Medicare Part B revenues not collected before; about one-quarter represents changing demographics of the population and laws enacted by Congress, and another quarter is due to an increase in the volume of services provided—which no one has yet figured out as to why this has occurred and how to control it without risking access to needed services and endangering quality of care for the elderly. Put another way, more than 80% of the Part B premium increase appears to be due to factors not directly under the control of physicians.

FACT: Physician fees have been—and are mandated to remain—under tight controls until 1990. Except for the fees of about 30% of all physicians called "participating" Medicare physicians, the vast majority of physicians have

had their fees limited by Congress since 1984. From 1984 through 1986, Congress froze fees at 1983 levels; for 1987-90, fees are under tight controls which limit most increases to 1% (and in some cases require reductions).

FACT: Fee controls and limits on Medicare payments to physicians don't—and won't—solve the problem. Experience with physician fee freezes and the current limitations—not to mention the wage and price controls of the early 1970s—are testimony to this fact. There is no easy solution to Medicare's cost problem, and placing the blame on physicians alone is unfair. The solution lies in a thoughtful, factually-based, combined approach among members of the medical profession, Congress, the Administration and others to develop long-term major

reforms. One such approach is the HCFA-funded resource-based relative value scale now under development by Harvard which would shift payment incentives away from high-cost technology and toward lower-cost primary care services.

Everyone should and must be committed to making Medicare work at a reasonable cost. Quick fix, ill-advised fee and payment controls by Congress won't work. Politically motivated scare tactics and prominent national headlines emanating from the Administration to bolster opposition to new benefits such as catastrophic coverage are counterproductive. We must all work together to develop constructive approaches to protecting the health needs of our growing elderly population. The stakes are simply too great not to do so.

ISMA Responds to Charge That Physicians Are to Blame for Higher Medicare Costs

The following letter was sent to The Indianapolis Star by Dr. Shirley Thompson Khalouf, then ISMA president, and Dr. William H. Beeson, president of the Marion County Medical Society.

S PHYSICIANS, the allegations in the article "38.5% Increase in Medicare Costs Proposed" (Star, Sept. 15) greatly concern us. The story totally ignores some important reasons for the increased cost of Medicare, and blames doctors instead. Consider these factors:

First, physician fees for Medicare have been tightly controlled in recent years. In fact, since 1984 physicians make up the only segment of society that has been subjected to a fee freeze.

Although the freeze was lifted earlier this year, it was replaced by a complex system for limiting physicians' freedom to raise fees.

Second, the fastest growing segment of our population is now covered by Medicare, or soon will be. (This trend won't change in the future because the number of Americans aged 75 and above will increase by 30 percent in the next seven years.) More people in this age group require more medical care than younger consumers. The Federal Government recognized this trend and attempted to cut Medicare costs by requiring more outpatient care. The theory was that outpatient care would be less expensive than hospitalization. The result is that hospital costs (Medicare Part A) did, in fact, decrease.

However, outpatient costs, which include physician costs, (Medicare Part B) increased because more Medicare recipients were required to seek outpatient care. Consequently, some of the blame for increased costs is costshifting from one segment of Medicare to another.

Another factor is medical technology, which has vastly improved the quality of medical care; but technology is expensive. It takes years of research, development and testing before new equipment and procedures can be used by medical professionals. All of this adds to medical costs. Technology impacts on costs another way, one which has already been alluded to. It prolongs peoples' lives. While we weigh these two factors and their impact on medical

costs, medical technology is not something we want to deny to our older patients.

Rep. Fortney H. Stark, D-Calif., prefers to ignore these important points and place the blame for increasing Medicare costs solely on physicians. Physicians are genuinely concerned with providing appropriate, affordable quality care. As the Medicare system is changing, that process is becoming increasingly difficult.

Our society can no longer afford to pay for Medicare. Now, with Rep. Stark leading the charge, the Federal Government seeks to ration medical care to the nation's elderly—and force doctors to do the rationing. (DRGs, which push doctors to discharge older patients from the hospital quicker and sicker, are a prime example.)

Why else would the congressman make such an inflammable, irresponsible and untrue statement as "the current fee-for-service payment system gives doctors a key to the treasury"?

And why would an unnamed federal official say: "Doctors are apparently trying to make up for the effects of several years in which their Medicare

fees were frozen or tightly restricted by federal laws"?

The purpose of statements like these is to cast a shadow over the physicianpatient relationship and erode the doctor's responsibility as the patient's advocate.

Physicians are justifiably bothered by rationed care and the cost containment policies currently afoot in this country. Both create a tremendous ethical conflict for physicians who are trained to treat illness, not cut care.

Medicine's Lighter Moments

THE SURGICAL PROBLEM

TED L. GRISELL, M.D. Indianapolis

FEW YEARS AGO, Jane Pauley, then David Hartmann's counterpart on another television network, returned to Indianapolis, her original home, because her father was seriously ill. He had been a patient for several weeks. He had complications involving massive gastrointestinal bleeding and was facing the possibility of a portacaval venus decompression operation—an operation of con-

Copyright 1987 by Ted L. Grisell, M.D., 5211 Brendonridge Road, Indianapolis, Ind. 46226 (April-September), or Point East 301, 3801 S. Atlantic Ave., New Smyrna Beach, Fla. 32069 (October-March).

siderable magnitude that is fraught with potentially serious complications.

Jane Pauley was then engaged to the author of "Doonesbury," the comic strip that has achieved remarkable notoriety. Her husband came from a family of physicians. His father is a renowned internist from upper-state New York. With his advice, and with her own remarkable intellectual understanding, she arrived in Indianapolis loaded with questions and with apprehension over the risks of the intended procedures for her father's care.

She questioned me for a couple of hours. In fact, she had been primed with very excellent and intelligent medical questions which at times required considerable erudition on my part to try to answer honestly, forthrightly and as accurately as possible in a pre-operative environment.

Jane's father was not scheduled for

surgery until about three days after this interview. She had wanted to remain in Indianapolis without interruption until the surgery was completed, but she had an appointment to meet David Hartmann for the first time the next day in New York. She made the trip as planned and returned to Indianapolis.

To my surprise and pleasure, she had no further questions about her father's surgery.

Mr. Pauley's recovery from surgery was as expected. In fact, it was as complete and even better than anticipated. At the time of this writing, his health is exceptionally good, considering the magnitude of the illness at the time of the surgery.

I would like to say that the procedure was done by me personally, but I am even prouder of the fact that it was performed mainly by my number one son.



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How Alcoholic Employees Can Get Help

BILL BROOKS, CAC Indianapolis

HE DEPARTMENT OF Health and Human Services ranks alcoholism, with heart disease and cancer, as one of the nation's major health problems. An estimated 10 million Americans are alcoholics.

Alcoholism disrupts families, increases insurance rates and causes poor job performance. The impact of alcohol-related problems costs business and industry \$20 billion annually and takes an awesome toll in human lives and suffering. For every alcoholic there are four to seven other persons affected by his/her disease. This means that, including the alcoholics, from 50 to 80 million persons feel, to some extent, the impact of alcoholism.

As late as the 1930s, alcoholism was still spoken of mainly in whispers, since it was universally considered to be a matter of morals or will power. The Du-Pont Company in 1942 authorized its medical division to initiate an employee assistance program that would set moral judgments aside and treat alcoholic employees as suffering human beings in desperate need of help.

DuPont found that "Most alcoholics, despite the bitterness and despair produced when they drink, are usually capable, worthwhile persons when they don't. They tend to be ambitious, sensitive, and intelligent, and a recovery from alcoholism frequently marks not only the end of destructiveness and loss but a new level of constructiveness and gain."

The author is a Certified Alcoholism Counselor employed by the Koala Centers, 11350 N. Meridian St., Suite 330, Carmel, Ind. 46032.

Early employee assistance programs (EAPs) focused on the late stages of the disease of alcoholism, where symptoms are easier to identify. Only slight gains were made in program development in the 1940s.

In the 1950s, programs began to be broadened beyond intervention in alcoholism. During the next two decades programs were broadened even more and included services for other health and behavioral problems. Family members of the employee were included in medical insurance coverage. More issues were addressed and

Alcohol-Related Problems Cost Business and Industry \$20 Billion Annually...

emphasis on deteriorating job performance was spotlighted.

Business leaders slowly began to develop a better understanding of how personal issues affect job performance. Programs were still adopted cautiously in some cases, probably because they still were considered experimental. By the late 1970s and early 1980s, EAPs grew rapidly, with some 5,000 companies and businesses having EAPs, compared with about 500 in 1970. In 1980, approximately 10 million employees were covered by EAPs; a survey by the Opinion Research Corporation indicated that more than half the Fortune 500 companies had these programs.

Factors probably enhancing this trend are: (1) More educational efforts to boost companies' awareness of problems, plus public information programs

to explain the concept of occupational programming, and (2) An increase in professionally trained occupational consultants who were developing, marketing and implementing programs for companies.

A definition of alcoholism (and by extension, abuse of other drugs): A chronic, progressive, fatal, addictive disease characterized by a craving for alcohol (drugs) and its effects. The disease is marked by dependence on alcohol and loss of control over drinking. (Alcoholism is accepted as a disease by, among others, the American Medical Association and the World Health Organization.)

It is estimated that half of all production problems are alcohol-related. Of the 10 million alcoholics in the U.S., nearly half are employed. Many working drinkers are "enabled" to continue drinking, sometimes while on the job, by supervisors and co-workers who are, for one reason or another, reluctant to confront the employee. "Covering up" for someone who is late for work, or doing a sloppy and possibly even dangerous job, or not on the job at all, continues to be a serious industrial and health problem.

Here's the policy of one company, with offices and plants across the nation: "An employee or dependent who accepts treatment for alcoholism or other drug dependency will receive the same employee benefits provided for other diseases under our established health insurance plans.

"The decision to seek treatment will not be detrimental to job security or promotional opportunity, and the employee will be guaranteed complete confidentiality."

A clearly stated WRITTEN policy is the foundation on which the EAP is built.

Many companies have an "unwrit-

ten" policy. It might read: "Any employee (including executives and other top management) who can successfully conceal the disease of alcoholism from superiors will be entitled to full use of sick leave and repayment of hospitalization costs, and will receive all pay and benefits, including promotions and regular raises.

"When the employee can no longer conceal the disease, termination will result."

A clearly stated written policy was communicated to an Indiana company's employees in this letter from the company president:

"Not many people go through life without experiencing some kind of serious personal problem. When alcoholism, emotional and psychological problems, marriage and family problems, financial and other problems get out of control, they upset our lives and create much misery.

"Our company is concerned with its employees not only as workers, but as individuals. We recognize that when an employee or a member of his family develops any of these serious personal problems, the employee's work performance and attendance may be negatively affected.

"Because the company wishes to make a strong effort to retain its valued employees by enabling them to resolve their personal problems, it has begun a new Employee Assistance Program (EAP) which is available to all employees and their immediate families. The company especially wishes to see that employees and their dependents affected with the illness of alcoholism receive the professional treatment needed toward recovery.

"The program is voluntary and confidential. Participation is encouraged and will not jeopardize the employee's job or future promotional opportunities. The Employee Assistance Program offices, for assessment, referral and follow-up, are located away from other company facilities. An EAP coordinator can be contacted for an appointment by calling (phone number).

"There is no cost to company employees or their immediate family members for the assistance provided by the EAP office. The company's health insurance program covers all or most of the cost for medical and hospital treatment services as may be used. There may be some cost to the

Today, More Than 5,000 Companies and Businesses Have Employee Assistance Programs to Deal with Serious Personal Problems

employee or family member if the EAP office refers a person to marriage counseling, psychological counseling, financial guidance or other services not covered under the company's group insurance plan. However, cost will be kept in mind and discussed in helping you plan a course of action."

The usually accepted procedure for program implementation is as follows:

- 1. Policy—written jointly by management and labor.
- 2. Company referral person or outside counseling service is named.
- 3. Explanation and review of policy and procedure with top management.
- 4. Supervisor and shop steward orientation.
 - 5. Employee notification.
 - 6. Family notification.
- 7. Continuing education for supervisors and shop stewards, employees and family.
 - 8. Evaluation.

The true basis of the policy is, as worded by General Motors, "Alcoholism and drug abuse is recognized as a highly complex disease which is treatable."

Once the policy has been adopted, a simple set of case-handling procedures should be set up.

Some employees will enroll volun-

tarily in the help program. These need not concern supervisors or shop stewards because, if the confidentiality phase of the EAP is observed, no one will know they are involved in the program unless they themselves choose to disclose it.

The following deals with those referred because of deteriorating job performance:

- 1. The supervisor prepares a detailed documentation of the employee's job performance deficiencies—specific dates absent or late, deadlines missed, errors in work, unacceptable behavior, etc.
- 2. Focus of initial interview should be on job performance. No opinions, judgments or name-calling should be used.
- 3. Employee (if union member) should have the right to have a union representative at the interview.
- 4. After the job performance is reviewed and the employee told what sort of standards must be met, the employee should be informed of professional services—including diagnosis and counseling—available on an absolutely confidential basis.
- 5. The employee may accept or reject the offer without prejudice. Neither supervisor nor union representative need know whether the employee has contacted the program. No discipline is involved.
- 6. If the employee's job performance improves to an acceptable level, there is no longer a problem.
- 7. If the first interview involves discipline or if job performance problems persist, the employee should be offered a firm, fair choice between accepting the offer of confidential help or accepting the disciplinary consequences of the poor performance.
- 8. In most cases, the employee who is confronted with this sort of choice will ultimately agree to referral to the program.
- 9. If the employee chooses termination, there is little to be done to help.
- 10. If the employee accepts help, there should be a clear understanding

that this means following whatever course of treatment is prescribed.

Most companies insist that involvement in the EAP be kept separate from personnel records and that active participation in the EAP not be a hindrance to promotions or raises.

The employee alcoholism/assistance program director should not be involved in these interviews.

In some organizations where a progressive disciplinary process is in effect, the employee is never given a choice, but is told at each stage of discipline that program services are available.

Participation in the EAP should IN NO CASE protect the employee from disciplinary action if the job performance remains unsatisfactory.

An important factor in an EAP is, oddly enough, often overlooked: Make sure employees know there IS a program. It is not always possible to assemble groups of employees for educational sessions. Letters can be sent to their homes. Brochures describing the policy and program can be mailed or used as payroll envelope stuffers. Notices and posters can be placed on bulletin boards throughout the plant or office. Articles can be published in the company newsletter.

The International Telephone and Telegraph Corporation (ITT) has a nationwide hotline operating 24 hours a day to be responsive to employees with personal problems. ITT maintains counseling operations at 22 units; in the eight years of the program, the company has helped 4,500 employees who sought professional assistance.

A list of signs and symptoms should be given each employee as a tool for self-diagnosis, together with information on how to enroll in the program. Signs and symptoms are listed in a questionnaire published by the National Council on Alcoholism (733 Third Avenue, New York, N.Y. 10017).

The ultimate aim of any treatment program, if detoxification and rehabilitation in a treatment facility are warranted, should be to channel alcoholic individuals into some form of long-term supportive therapy.

The one with by far the highest chance of success is the fellowship of Alcoholics Anonymous. For this reason it is advisable to make sure that any treatment facility used cooperates with A.A.

A.A. does not itself establish alcoholism programs, but does want to cooperate with these programs. In some instances—in small industries where no formally structured pro-

With an EAP, Troubled Employees Get Help to Improve Job Performance; For Many, an EAP Is the Last Hope for Recovery

grams exist—information arrangements are made for A.A. members, employed by the organization, to talk with employees who show signs of drinking problems. This is not professional counseling in any sense and is known in A.A. as "Twelfth Step work" (one alcoholic trying to help another alcoholic and thereby helping the helper to stay sober).

More and more companies and unions are including alcohol and drug abuse inpatient treatment as one of their health insurance benefits.

The Program for Alcoholic Recovery, started nearly 20 years ago by the U.S. Postal Service, found that the employed alcoholic annually loses 22 to 36 more days of work time than the majority of the work force. The postal program, called PAR, emphasizes that "skid row is only the future address of some small percentage of those having a serious drinking problem." Actually, only 3-5% of U.S. alcoholics are on skid row.

Cost to the employer? According to

Owens/Corning Fiberglas Corporation, 25% of each alcoholic's annual salary is the average cost to the employer in "absenteeism, reduced productivity, accidents in the work place and use of the medical plan. Take the average company salary, multiply that by 10% of the total work force—the average number of alcoholics—then multiply that by 25% and that results in the approximate loss to a given company."

How effective are EAPs? DuPont reported a recovery rate for employees of 81%. Metropolitan Life Insurance Company reports that over 25 years' experience with a control program revealed a complete, long-term stable recovery rate (at least two years of total abstinence) of more than 60%.

Eastman Kodak Company, one of the pioneers in EAPs, experienced a recovery rate of 75-80% of the cases, and another 10 to 15% were considered to be improved.

The New York Transit Authority checked employee records. The check encompassed five years before the EAP and five years afterward. It considered only one item: sick pay. The saving on sick pay was at least \$1 million a year. Today, that figure exceeds \$2 million a year.

There is neither a magic formula nor an ideal approach for developing programs to help troubled employees, since programs should be organized to meet specific needs of each organization.

With an EAP, troubled employees can receive help so that job performance improves. And, for many, an EAP is the last hope for recovery. The bottom line is, after all, someone's life.

If only one employee is saved through a work organization's EAP, it is well worth the time, energy and resources which are given to program development.

For more information concerning matters discussed in this article, call the Koala Centers, (317) 573-6272. The Koala Centers toll-free Helpline in Indiana is 1-800-622-4711; outside Indiana, the number is 1-800-23KOALA (56252).



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DIS-continuity of Care and the 'Near Miss' Phenomenon in the Practice of Medicine

Letter to the Editor

OLLOWING YOUR acceptance in February 1987 of my manuscript on continuity of care (COC) for publication in the September issue of INDIANA MEDICINE, a remarkable concatination of events evolved in my practice that confirm my impression regarding the importance of COC. These experiences exemplify many of the medico-administrative forces that disrupt COC and that I have suggested in my article possibly to be inimical to health care quality. In addition, these observations amplify my contention that COC is not only a "good thing" but also that inattention to it may at times be costly, if not disastrous.

The above referenced events are summarized below in chronologic order of their occurrence in 1987. The date of each event is followed by (a) the clinical problem; (b) a listing of those dimension(s) of the continuity environment that have been disrupted; (c) the medico-administrative cause(s) of the disruption; and (d) either the potentially adverse health care outcome (italicized) that may have been averted because COC was preserved or the adverse consequence (CAPS) to which a lack of COC may have been contributory. The former of these two possible outcomes, namely, those events that may have been averted are the "near miss" phenomena herewith referenced.

Case #1, April: (a) Silent myocardial ischemia in 56-year-old male; (b) Chronologic, geographic, interpersonal, informational, and stability dimensions; (c) Relocation of provider, instability of patient employment, exercise by pa-

tient of "company physician" prerogative for care; (d) Myocardial decompensation, symptomatic coronary insufficiency, and/or sudden death did not supervene ("near miss" events) while intercritical health maximization by patient's family physician following a two-year health care hiatus revealed EKG changes suggesting silent myocardial ischemia and/or infarction confirmed by subsequent treadmill examination, coronary arteriogram, and CABG x 3.

Case #2, June: (a) Acute epididymoorchitis in 85-year-old male; (b) Accessability, interdisciplinary, and informational dimensions; (c) Substitute care by "on-call" physician, referral for surgical consultation to emergency facility distant from office records, Medicare payment policy regarding multiple participating providers for surgical cases; (d) Initial recommendation of scrotal exploration and orchiectomy ("near miss" procedure) was modified to conservative medical management with antibiotics and NSAIDS following review with surgeon of available records by regular attending physician.

Case #3, July: (a) Modified radical mastectomy for carcinoma of breast in 60-year-old female with 100,000 colonies staphylococcus aureus/ml. in urine on admission and history of Type 2 diabetes and COPD; (b) Informational dimension; (c) Patient denial, inadequacy for prospective purposes of the "focused" history and physical examination by consultants. Perioperative exacerbation of urinary tract infection, diabetes, and respiratory in-

sufficiency with potential for delayed wound healing ("near miss" complications) averted by appropriate consultation with family physician as member of treatment team.

Case #4, August: (a) Herniorrhaphy for uncomplicated inguinal hernia in 50-year-old male with 10-year history of coronary artery disease including CABG x 4 and ventricular aneurysmectomy, type 2 diabetes, gouty diathesis, and recent mental depression; (b) Chronologic, geographic, interdisciplinary, interpersonal, informational, accessability, and stability dimensions; (c) Referral to distant hospital for surgery, imbursement/payment policies of Preferred Care of Indiana (BCBS) and the Chrysler-General Motors P.P.O. (BCBS); (d) SUDDEN DEATH! (Not a "near miss," unfortunately).

It is noteworthy that seven degrees of discontinuity characterized the care of Case #4 during final treatment period before demise. The patient was never returned by consultants to original referring physician regarding severe fatigue, depression, and insomnia, which symptom triad had been identified at the time of referral for herniorrhaphy three months previously. Patient found deceased at early AM hour in front of television set, an apparent victim of fatal arrhythmia. Decedent's widow indicated that no post-op visit was made to regular family doctor because patient was being seen by "preferred" doctors.

In summary, specific examples of forces that interrupt COC are

presented and possible adverse effects of health care discontinuity on outcome are exemplified. It would appear that vigilant monitoring of continuity of care by medical staffs throughout the country will be required to prevent this adverse impact. It clearly is time to scrutinize the medico-administrative forces that promote discontinuity of care. Only through such scrutiny can we be certain that years of hard, scientific, and caring medical experience will not be swept under the rug either by a payment mechanism or by a competing care-giving program through patient conditioning by the "hype" of the third party or a marketing organization whose primary objective is economic survival. Well designed outcome studies that quantify the "near miss" phenomenon are urgently needed to provide assurance regarding this concern and to retain conscientious physicians in the "trenches" of primary care. - Richard J. McAlpine, M.D., Urbana, Ind.

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SAIL, DON'T DRIFT

Jack Valancy's Management Notes for Physicians

JACK VALANCY Cleveland Heights, Ohio

I find the great thing in this world is not so much where we stand, as in what direction we are moving. To reach the port of heaven we must sail sometimes with the wind and sometimes against it—but we must sail, and not drift, nor he at anchor.

-Oliver Wendell Holmes

Charting a Course for Success

The winds of change blowing through medicine are strong. They present a challenge to physicians, even confuse or intimidate some. Many physicians feel pushed off course; others feel pressure to change their practice—or leave it altogether. If your practice is not as successful as you would like, it might be time to take your bearings.

Imagine your ideal practice. How does it differ from your current practice? What prevents you from making your ideal a reality? You must set sail for success.

Changing Times

Physicians are not exempt from the laws of economics. By the 1970s, American medicine's postwar boom had become a "crisis in health care."

Copyright by Jack Valancy, Reprinted with permission. Jack Valancy heads a health care management consulting firm in Cleveland Heights, Ohio.

People started reassessing their roles as workers, consumers, and patients. They became less willing to tolerate mistreatment in any arena and became more vocal in their demands for change. This helped to initiate controversial legislative and regulatory reforms in health care, many of which, in the 1980s, were aimed squarely at physicians. [For more information, see *The Social Transformation of American Medicine* by Paul Starr (New York: Basic Books, 1982)].

As a physician, you sail some rough waters. You're wise enough to know you can't change the weather, but you can run a tight ship, ride out the storm, and head for calmer seas.

Your Ideal Patients

Who are your ideal patients? Old, young, or all ages? Individuals or families? City, surburban, or rural? Rich, middle-class, or poor? You must identify the population you want to serve before you can take specific action to attract and retain them in your practice.

Although self-promotion may be in vogue, studies show that most patients choose their physicians on the recommendation of friends and other physicians. Therefore, it is extremely important that you acknowledge all referrals.

However, letting people know about your practice does not require that you sacrifice your dignity. Public speaking before medical and lay groups, announcements of a new associate or office, and a listing under your specialty in the Yellow Pages are accepted and effective methods of becoming more visible.

Roles and Respect

Shaping your patients' impressions of your practice is up to you. If you establish open, adult relationships with your patients, you will reach all but the most recalcitrant. Answer questions honestly and take time to discuss the patient's problems in plain English. Printed patient education materials reinforce your advice. Keeping patients informed about non-clinical matters, such as the billing and insurance procedures of your practice is important, too.

It's not uncommon for the people working in a medical practice to get caught up in adversary relationships with patients. This behavior can poison a practice. Insist that everyone in your office demonstrate a commitment to excellence in patient service. Cultivate positive attitudes by treating patients with courtesy, respect, and concern for their general well-being.

The Bottom Line

The rules of reimbursement are changing. Physicians and their staffs who ignore this, out of defiance or inertia, are taking a serious financial risk. Effective and efficient patient accounting can boost your practice's net income. Financial policies which reflect your practice philosophy should be clearly defined and communicated to both staff and patients. If you expect payment at the time of service, request it. Your staff should be knowledgeable about all aspects of health insurance reimbursement. Claims should be processed without delay, in strict accordance with each carrier's requirements. Patients should be billed regularly.

Delinquent accounts should be contacted promptly without fail.

Should You Join an HMO, PPO, or IPA?

Many physicians are enlisting as providers in health delivery systems, such as Health Maintenance Organizations. Preferred Provider Organizations, and Individual Practice Associations, Some physicians, particularly those with growing practices in areas where competition is intense, have been pleased with their decision; others have been disappointed. Fewer new patients than anticipated, unreasonably low reimbursement and capitation rates, and cumbersome paperwork are some of the complaints. Carefully consider the obligations, as well as the opportunities, of such affiliations.

Joint Ventures

Hospitals are encouraging physicians to participate in joint ventures with them. Some of these enterprises

are sound investments, while others are financial disasters. Before you invest, study the prospectus. Beware of overly optimistic projections and understand risks. Above all, consider your prospective partner's track record: Have similar past ventures been successful? Often it's best to stick to your knitting. If you just continue to run your own practice, you might give up the chance to make a lot of money, but you won't risk losing a lot of money, either.

Work Smarter, Not Harder

Improving your practice's management systems could be the most important step you'll ever take. This kind of assessment and fine tuning is essential to achieving your professional and personal objectives. Some aspects of getting your practice ship-shape: Establish and maintain a sound organization structure with clear job descriptions and personnel policies, so that your of-

fice manager and staff can work as a team. Analyze and revise procedures for handling telephone calls, scheduling appointments, processing medical records, and controlling inventory. Evaluate and redesign your office to create more usable space and a more pleasant environment for physicians, patients, and staff.

Sail Away

There are many ways to effect changes in your practice. You must choose the ones that will bring you closer to your ideal. *Management Notes for Physicians* is an aid to navigation. In future issues, we will explore topics that will help you chart a course to success in your practice.

There is only one success to spend your life in your own way. - Christopher Morley

The suggestions below, provided by Schering Pharmaceuticals, are recommended by Indiana Medicine as a handout for patients. Reproduced in large letters and framed, the suggestions would make a good wall hanging, in the doctor's office.

HOW TO SUBDUE A 'SILENT KILLER'

Don't let hypertension catch you unaware. Education campaigns sponsored by the U.S. government and the American Heart Association recommend the following to help keep your blood pressure under control:

- Have your blood pressure checked at least once a year.
- Women taking oral contraceptives should have more frequent blood pressure checks.
- If your blood pressure is high, consult a physician.
- If you weigh more than 20 percent above ideal body weight, start a reducing program.
- · Reduce salt intake.
- · Reduce alcohol consumption.
- Limit or stop smoking.
- Exercise regularly for at least 20 minutes three times a week.
- If blood pressure medication has been prescribed, don't stop it without consulting a physician.



AUXILIARY REPORT

Anne Throop, Indianapolis ISMA Auxiliary President 1987-88

THE AMA WHITE PAPER ON ADOLESCENT HEALTH: WHAT IS IT? WHAT DO WE DO WITH IT?

Dr. James Sammons, AMA executive vice-president, said, "We are committed to this battle to save our young people for as long as our efforts are required." That the commitment is needed is evidenced by the startling findings of the AMA White Paper on Adolescent Health.

The White Paper is meant to stimulate interest in adolescent health and to suggest some lines along which organized medicine and individual physicians might move to reduce youthful casualties. The White Paper notes that adolescent morbidity and mortality rates have increased 11% in the last 20 years in spite of increased emphasis on health. It also indicates that no single reason can be held accountable for the increase, and identifies five contributing categories: substance abuse, premature sexuality and pregnancy, victimization. psychological disorders and suicides, and violence and trauma.

Among some of the findings in the categories are these:

Substance Abuse

Cigarettes: 1 in 5 high school seniors smokes cigarettes daily;

Drugs: ²/₃ of American youth use an illicit drug before finishing school;

Alcohol: 1 in 16 high school seniors drinks alcoholic beverages daily.

Sexuality/Pregnancy

Illegitimate births: 46% of all births to unmarried women are to teens;

Abortion: $^{4/_{3}}$ of all abortions are to teens:

Sex: Of the 29 million adolescents over the age of 12, 12 million are sexually active

Vietimization

Rape: 1/2 of all rape victims are less than 18 years of age;

Prostitution: 600,000 teenage girls, and 300,000 teenage boys work as prostitutes: the average age is 15;

Abuse: Each year more than 1 million children and youths suffer serious abuse at the hands of parents, guardians, and others.

Psychological Disorders/Suicides

5,000 teens commit suicide annually; 50,000 teens attempt suicide annually;

Up to 10% of teenage girls suffer from eating disorders such as anorexia and bulemia.

Violence/Trauma

80% of deaths in 15- to 24-year-olds are caused by accidents, suicides, and homicides:

Adolescents are responsible for $\frac{1}{3}$ of all violent crime.

Rather than focusing on the negative behaviors, the approach should be to provide adolescents and their families with the knowledge, skills, incentives, and supports they need to make positive decisions in favor of healthy behaviors. Further, a comprehensive effort would seek to provide needs identification and advocacy for those youths who lack family or other supports.

The AMA proposes the following actions during 1987:

- 1. Build coalitions, to focus attention on the overall health of adolescents.
- 2. Establish a clearinghouse, a single source for compilation, integration, critical assessment, and dissemination of knowledge on adolescent health.
- 3. Create a research agenda, to identify research needs and stimulate new work.

- 4. Identify programs that work; translate those studies into medically sound, experientially tested models and guidelines for use by state, local and specialty medical societies, individual physicians, and other interested groups and individuals.
- 5. Enhance physician knowledge; provide information to practicing physicians to help them prevent and treat adolescent health problems.

The opportunity to contribute to the health of 40 million adolescents offers a major challenge to American physicians, as it does to all of American society. State auxiliaries are encouraged to develop programs that will address the problems facing adolescents throughout their state. County auxiliaries are encouraged to develop projects after assessing the needs in their communities and, when possible, to work closely with the corresponding medical societies or other local AMA organizations. The recommending the development of school-based programs so that the largest number of adolescents can be reached.

Auxiliary projects might include: education on sexual abuse prevention; sex education that includes information on adolescent pregnancy prevention and sexually transmitted diseases; education on rape, assault, and family violence, and the agencies that offer help; drunk driving awareness programs; seminars on teen suicide prevention; education on eating disorders; and parenting programs for adolescent mothers and fathers.

The AMA invites the participation of all concerned organizations and individuals in service to the youth who represent our future.—Sylvia Scheeringa, ISMA-Auxiliary Health Projects Chairman

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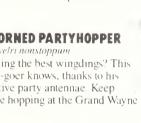
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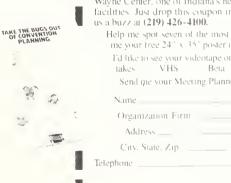
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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Otitis Media... CONTINUED FROM PAGES 1043-1048

- 1) The prevalence of otitis media with effusion (OME) is supported by which of the following statistics?
 - a) 5% of all children have at least one episode of OME by age 1 year
 - b) Middle ear disease accounts for 1/3 of all office visits under age 5
 - c) 10% of all well-baby visits detect middle ear disease
 - d) ¾ of follow-up office visits are for middle ear disease
 - e) All of above
- 2) Which of the following conditions contribute to an increased incidence of OME?
 - a) Placement in community day care centers
 - b) Birth weight less than 2.4 kg $(5^{1/2}$ lbs)
 - c) Exposure of child to cigarette smoke (2.8 times normal incidence)
 - d) Positive family history of ear infections
 - e) All of above
 - f) None of above
- 3) Of the pathogenic microorganisms producing middle ear infections, which three of the following may produce B-lactamase and result in penicillin resistance?

- a) Pneumococcus
- b) Staphylococcus aureus
- c) Hemophilus influenza
- d) Branhamella catarrhalis
- e) Streptococcus (Group A)
- 4) In treating otitis media, the six antibiotics of choice in decreasing order are:
 - a) cefactor
 - b) tetracycline
 - c) amoxicillin
 - d) cephalexin
 - e) erythromycin + sulfa combination
 - f) ampicillin
 - g) trimethaprim + sulfa combination h) amoxicillin/clavalanate potassium
- 5) Prophylactic use of antibiotics is helpful under which of the following
 - a) at least 5 attacks of AOM within a 12 month period
 - b) 3 attacks of AOM within a 6 month period
 - c) 2 attacks of AOM before 6 months of age
 - d) all of above
 - e) prophylaxis is never helpful
- 6) Myringotomy (tympanostomy) is a surgical opening of the eardrum. It is indicated for which of the following

reasons.

- a) prevent suppurative complications (acute mastoiditis, labyrinthitis, facial nerve paralysis, meningitis)
- b) relieve otalgia
- e) microbiologie diagnosis
- d) all of above
- e) a & c only
- Ventilation tubes are most effective in the treatment of chronic, nonsuppurative otitis media persistent after the following duration of medical treatment:
 - a) 2 weeks
 - b) 3 months
 - c) 6 months
- 8) Which of the following are complications of ventilation tube surgery; which are those seen resulting from chronic OME with medical treatment only:
 - a) tympanosclerosis
 - b) otorrhea
 - c) persistent eardrum perforation
 - d) cholesteatoma formation
 - e) drum atrophy
 - f) all of the above
- 9) A search of the literature reveals no case of mortality or significant morbidity from anesthesia in association with ventilation tube placement.
 - a) True
 - b) False
- 10) Among those patients receiving ventilation tubes for chronic nonsuppurative otitis media, the number responding after one insertion and requiring no further therapy is:
 - a) 50%
 - b) 95%
 - c) 80%

OCTOBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the October 1987 issue: "Split-Course and Palliative Radiation Therapy in Non-Small Cell Lung Cancer."

1. a	6. b
2. a	7. b
3. a	8. b
4. a	9. a
5 a	10. b

Answer sheet for Quiz: (Otitis Media)

1. a b c d e 6. a b c d e
2. a b c d e 7. a b c
3. a b c d e 8. a b c d e f
4. a b c d e f g h
5. a b c d e 10. a b c

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of Indiana Medicine.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Dec. 10, 1987 to the address appearing at the top of this page.

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

THE ANNUAL SCIENTIFIC MEETING OF THE INDIANA CHAPTER OF THE AMERICAN COLLEGE OF PHYSICIANS will be held all day Friday and Saturday morning, November 13 and 14, 1987, at the Hyatt Regency Hotel in downtown Indianapolis. This year's program will emphasize clinical oncology for internists. Bill Fisher, FACP, is program chairman. He and his committee have worked hard to put together what will be a very educational program. The guest speakers and topics include: Oncogenes, Insights into the Pathogenesis of Malignancy, Bruce J. Roth, ACP member; Recent Advances in Routine Anticoagulant Therapy with Heparin and Coumadin, Douglas A. Triplett, M.D., FACP: A Review of Infective Endocarditis in a Community Hospital -Ritchey Housestaff Paper, Joseph E. Steinmetz, M.D., ACP associate; MRI: Should We Be Using It Clinically and When? Mary K. Edwards, M.D.; Management Decisions in Curable Breast Cancer: Guidelines for Primary Management, George W. Sledge, Jr., M.D.; Management Decisions in Unresectable Non-small Cell Lung Cancer: To Treat or Not to Treat? Anthony Greco, M.D.; Cell Cycle Kinetics: Prognostic Indicator in Node Negative Early Stage Breast Cancer? Ritchey Housestaff Paper, Cora E. Nadorff, M.D., ACP associate; Cancer Biotherapy—The Present and Future, Robert K. Oldham, M.D., FACP; American College of Physicians Update, Saul J. Farber, M.D., MACP, ACP president emeritus; Recurrent Pulmonary Emboli: Secondary to "Pseudo-myxoma" - Ritchey Housestaff Paper, Matthew J. Mich. M.D., ACP associate; Cholestyramine-Induced Metabolic Acidosis - Ritchey Housestaff Paper, Charles R. Routh, M.D., ACP associate.

The Official College Representative will be Saul J. Farber, MACP, president emeritus of the American College of Physicians, and chairman, Department of Medicine, NYU School of Medicine in New York. He will update

us on College affairs. Other special topics to be discussed will be; Management Decisions in Unresectable Nonsmall Cell Lung Cancer; and Cancer Biotherapy—The Present and Future. Please make reservations directly with the hotel, but mention the meeting for a reduced rate—(317) 632-1234.

A FOUR PART MONOGRAPH SERIES on Continuous Infusion. Through the aid of an educational grant by Adria Laboratories, the Meniscus Education Institute has published a four-part monograph series on Continuous Infusion and Chemotherapeutic Drugs. This educational program was developed in response to the growing use of this method of drug delivery. It discusses some of the advantages and disadvantages of continuous infusion in specific patient settings as well as the personnel and equipment support needed to effectively employ this technique.

The objectives of this series are: To examine the patient because of chemotherapeutic drug delivery by continuous infusion; to provide the community based oncologist, oncology nurse specialist, pharmacist, and other interested medical disciplines with clinical information on all aspects of chemotherapeutic drug delivery via continuous infusion; to review patient and equipment complications that may occur by employing a continuous infusion technique; to review the advantages and disadvantages of various equipment, such as pumps and catheters, used in continuous infusion drug delivery; to discuss the role of continuous infusion in varying clinical settings, such as the institutional setting as well as the private office practice involving ambulatory care; to present information on patient education regarding the care and maintenance of the devices used to administer drugs via continuous infusion; to bring forth the practical consideration of continuous infusion chemotherapy as it stands today and in the future.

For a free copy of one or all of the

parts, send a request to Meniscus Educational Institute, P.O. Box 30,000, Philadelphia, Pa., 19103-9893.

SECOND INTERNATIONAL CON-GRESS ON NEO-ADJUVANT CHEMOTHERAPY will be held February 19-21, 1988, Paris, France. This is a follow-up of the First Congress which took place in Paris in November 1985; it will summarize progress accomplished around the world during this three-year period in neoadjuvant (or induction, or pre-operative) chemotherapy. The main topics to be covered will be: Scientific Bases, Breast Cancers, Head and Neck Cancers, Lung Cancers, Surgical Implications of Neo-adjuvant Chemotherapy, G.I. Tract Cancers, Bone & Soft Tumors, and Genito-urinary Cancers.

Workshops also included: Radiochemotherapy Combination -Rationale & Clinical Results, New Developments in Cancer Research, Neo-Adjuvant Chemotherapy in Pediatric Oncology - The State of the Art, Lymphokines & other Immunological Tools in Medicine (sponsored by UNICET Laboratories), Loco-regional Chemotherapy (sponsored by ROCHE Laboratories), New Development in Melanoma (sponsored by SERIVER International Research Institute), Pharmacokinetic Studies and Their Clinical Implications, Statistics.

The International Program Committee will select submitted abstracts which will be distributed either in the oral presentation sessions, poster sessions, workshops and/or to be published in the abstracts book. Only registered members may participate in the scientific sessions by December 15, 1987. For more information and forms, write to: 2nd International Congress on Neo-Adjuvant Chemotherapy c/o Professor Claude Jacquillat, SOMPS—Hopital Salpetriere 47, Boulevard de l'Hopital, 75651 Paris Cedex 13—France.



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FUTURE FILE

Indiana University CME

Nov. 12 13: Garceau Wray Lectures; Wishard Memorial Hospital, Indianapolis.

Nov. 13 14: American College of Physicians, Indiana Chapter scientific session; Hyatt Regency, Indianapolis.

Nov. 19: Vascular Disease: What the Primary Care Physician Needs to Know; Reid Memorial Hospital, Richmond.

Nov. 20: Infection in the Critically Ill Patient; Lincoln Hotel, Indianapolis.

Dec. 11: Indiana Classic Otolaryn gology Conference: Bloomington Memorial Union, Bloomington.

Jan. 25:27: Update Workshop in Echocardiography; Registry Resort, Scottsdale, Ariz.

For more information, call Melody Dian, CME, I.U. School of Medicine – 317: 274 8353.

Geriatrics

"Clinical Problems in Geriatrics" is the title of a CME course to be held Dec. 11.12 at the Concourse Hotel. Madison, Wisc. AMA Category 1 and AAFP credit: 12 hours.

The correspondent is Sarah Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705 (608) 263 2856.



The Javana of the American Medical Association publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

St. Vincent Hospital CME

St. Vincent Hospital and Health Care Center, Indianapolis, announces the following CME programs:

Dec. 2: Sixth Annual Symposium on Ethical and Moral Issues in Medicine; co-sponsored by Methodist Hospital of Indiana; Ritz Charles Conference Center, Carmel.

Dec. 11-12: Fifth Annual Update in Cardiology, Radisson Hotel, Indianapolis.

For more information, call Marilyn Soltermann, CME coordinator—(317) 871-3460.

Pathology

The annual meeting of the U.S. and Canadian Academy of Pathology will be held Feb. 28 to March 4, 1988, at the Washington Hilton, Washington, D.C.

For more information, contact Dr. Nathan Kaufman, Bldg. C, Suite B, 3515 Wheeler Road, Augusta, Ga. 30909 - 1404) 733 7550.

Medical-Legal Issues

"Current Medical Legal Issues in Indiana" will be the subject of the 5th annual SIMBA South seminar, to be held during spring break (March 28 April 1, 1988)

The seminar is offered by Seminars for Indiana Medico Legal Bar Association (SIMBA), Indianapolis, Faculty will include well known Indiana physicians and attorneys. Tutton is \$350, CLE and CEU credits can be earned.

For more information, cal 317 871 6222 or write SIMBA South V. 8402 Harcourt Road, Suite 220, In dianapolis 46260.

Pulmonary Rehabilitation

The International Conference on Pulmonary Rehabilitation and Home Mechanical Ventilation will be conducted March 2-5, 1988, at the Marriott Hotel, City Center, Denver, Colo.

Contact Webb-Waring Lung Institute, 4200 W. 9th Ave., Box C-321, Denver 80262 – (303) 394-8231.

Tuberculosis Update

A tuberculosis update conference will be conducted Jan. 27-28 at the Radisson Plaza Hotel, Indianapolis.

The conference is aimed at physicians specializing in pediatrics, geriatrics, pulmonary diseases, family practice and infectious diseases. It is being sponsored by the American Lung Association of Indiana and the Indiana Thoracic Society. AMA CME credit will be available.

For more information, contact the ALA of Indiana, 8777 Purdue Road, Suite 310, Indianapolis 46268-(317) 872 9685.

Neurology Seminar

"Neurology for the Non Neurologist" will be conducted Dec. 9-11 at the Westin Hotel in Chicago.

Contact: Office of CME, Rush University, 600 S. Paulina, Chicago 60612-(312) 942-7095.



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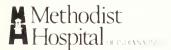
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In addition to providing benefits to physicians, the *Directory* is a practical means of providing financial support for INDIANA MEDICINE.

All diplomates of the ISMA are invited to enter a professional card in the *Directory*.

NEWS NOTES

Medical History Museum Seeks Financial Support Letter to the Editor

Last year, the Indiana Medical History Museum achieved a major milestone in its history when House Bill 1120 was signed into law. The law allows the Museum to enter a 99-year lease with the state of Indiana and Central State Hospital. The lease, renewable for another 99 years, is significant because it gives the Museum a long-term interest in the Old Pathology Building.

Such an interest is a prerequisite for fund-raising. Moreover, the law allows the Museum to lease from the state five acres of surrounding land, which eventually will allow for construction of an exhibits hall and a separate entrance.

The Old Pathology Building is a unique historic building. My research indicates that no other similar structure exists in this country. Audrey B. Davis, Ph.D., curator of the Medical Sciences Division at the Smithsonian, consulted with the Museum staff on its longrange plans. She was particularly impressed with the unlimited educational potential of the Museum, especially if it constructs an exhibits hall adjacent to the Old Pathology Building.

The Museum will soon launch a capital campaign to restore the Old Pathology Building and landscape the area surrounding the Museum. It also hopes to increase operating support so it can hire a full-time, professional staff, enlarge the Museum's collection of medical artifacts, study the feasibility and costs of constructing a separate exhibits hall, and provide the public with a variety of innovative programs. To accomplish these goals will require from \$200,000 to \$250,000 annually.

In anticipation of these needs, individual memberships have been raised to \$20 and voluntary annual dues for ISMA members have been raised to \$10. I hope ISMA members will continue to enthusiastically support the Museum. With your support, the Museum faces an exciting future.—Katherine Mandusic McDonell, Curator, Indiana Medical History Museum, 3000 W. Washington St., Indianapolis 46222.

Here and There ...

Dr. Thomas W. Alley, an Indianapolis nephrologist, moderated a panel discussion during the September meeting of the Spina Bifida Association of Central Indiana.

which is "taken first." Or, the "first

step."
A man may have a pattern of taking some course of action or inaction first. But that doesn't mean he will follow the first choice on and on without altering course. Varying facts or conditions may call for a change, and the prudent "man of principles" will make this change.—Richard J. Noveroske, M.D., Newburgh

Correction: In the commentary, "Why Not I?" (September 1987, page 895), the sentence in the fifth paragraph, "I don't give . . ." should have read "I don't see any active or infectious tuberculosis."—RJN

Dr. Rose S. Fife of I.U.'s Multipurpose Arthritis Center addressed members of the Terre Haute Area Arthritis Support Club in September.

Dr. Anna Louise Welch of Lafayette has been inducted as a fellow of the American Academy of Family Physicians.

Dr. Jack T. Collins of Bluffton discussed "Cholesterol and Your Heart" on a WKJG-TV/33 program in August; he is president of the Indiana Affiliate, American Heart Association.

Dr. Robert A. McDougal of Danville has been elected president of the Blood Research and Education Foundation of Indiana.

Dr. John L. Reynolds of Martinsville discussed osteoporosis during a September public meeting at Morgan County Memorial Hospital.

Dr. Stephen W. Perkins of Indianapolis directed workshops in ambulatory health care and in computer imaging during the fall meeting in Chicago of the American Academy of Facial Plastic and Reconstructive Surgery.

Dr. Paul Siebenmorgen of Terre Haute was one of 10 finalists nominated for the "Physician of the Year" award of the American Academy of Family Physicians.

Dr. George L. Plain, a retired South Bend internist who is director of the city's Health Department, has been honored with the Russel Lee Lectureship Award, according to the St. Joseph County Medical Society.

Dr. Michael G. Orr of Indianapolis was a guest faculty member for the "Phacoemulsification and Small Incision Cataract Surgery" course recently held in Toledo; the course was designed to instruct ophthalmologists in the latest techniques and advances in cataract surgery.

Dr. Grant Gehring of Vincennes discussed prostate cancer during the September meeting at Good Samaritan Hospital of "Families Facing Cancer."

Dr. Philip N. Eskew of Carmel has been elected vice-chairman of District V of the American College of Obstetricians and Gynecologists; he will serve three years.

Man of Principles

Commentary

A common misunderstanding is that a "man of principles" should follow the course he starts on with unwavering consistency.

Principles are often thought to be unchangeable rules. But it helps to look at the origin of the word—what meaning the coiners of this word were trying to fuse into it before their intent was corrupted later.

"Prin" comes from the Latin "primus," meaning "first." And "cip" comes from the Latin "capere"; it meant "to take."

So this word originally meant that

National Eye Care Project Has Toll-Free Helpline

Any older person who needs medical eye care but cannot afford it should call -800-222-EYES, the toll-free Helpline perated by the National Eye Care Project.

Eligible callers will be referred to a nearby ophthalmologist who has volunteered to provide care.

Every patient will be given a comprehensive medical eye examination for eye diseases and any needed treatment to protect vision. Services of the volunteer ophthalmologists are provided at no out-of-pocket cost to the patient. For this project, volunteer ophthalmologists are accepting Medicare and/or other health insurance assignment as payment in full for their services. If the patient has no insurance coverage, medical eye care is provided without charge.

Although there is no financial qualification for the program, the emphasis is on helping those who may be without the means to pay.

- To be eligible, a person must be 65 or older, a U.S. citizen, and no longer have access to an ophthalmologist he or she has seen in the past.
- This is not an eyeglasses program. The National Eye Care Project is designed to provide comprehensive medical eye examinations and treat-

ment to prevent or control eye disease. Eyeglasses are not covered by the program.

- If hospitalization is needed, volunteer ophthalmologists may be able to work with the patient to obtain needed care. Hospital charges are not covered under this program or by the doctor.
- The National Eye Care Project is for needy older persons who do not have an ophthalmologist. It is not a second opinion program.

Older people suffer more than half of the blinding eye diseases in the U.S.—and about half of this blindness could be prevented. If you know someone who needs eye care, but cannot afford it, ask them to call 1-800-222-EYES.

The National Eye Care Project is sponsored by your state ophthalmology society and the Foundation of the American Academy of Ophthalmology.

Medical College of Virginia Offers Executive Program in Health Administration

The Medical College of Virginia/ Virginia Commonwealth University will offer an Executive Master of Science Program in health administration beginning next year. The program is designed for health care professionals who work full-time.

The two-year program combines computer conferencing, programmed instruction, video tape packages, and self-directed study modules. Students spend only five periods on campus, each ranging from six to 12 days.

The 40-semester-hour curriculum is suited for physicians and other health professionals who want to make a transition from clinical practice to management, mid-level managers who want to move into executive positions and top-level managers who need additional training. For more information, call (804) 786-0719 or write to Executive Program, Box 203, MCV Station, Richmond, Va. 23298.

Koala Begins New Program

Koala Center, Lebanon, Ind., began a 10-day, inpatient treatment program in September for adult co-dependent persons, according to Bob Edwards, executive director of the Lebanon facility.

The intensive program is designed to help co-dependent patients from alcohol/drug-addicted families who are experiencing distress in their personal or professional lives. Aim of the approach is to enable those co-dependents to resolve maladaptive styles of living and establish a fulfilling life of recovery.

Physician Recognition Awards -



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Angeles, Armando E., Connersville Basavaraja, Hirematada, Muncie Bechtold, David L., South Bend Brill, Joseph B., Jeffersonville Brillhart, James R., Indianapolis Chaudhry, Aftab A., New Albany Divcic, Borivoj S., Valparaiso Dolezal, Bernard J., South Bend

Fiacable, Joseph P., Fort Wayne Gupta, Ram C., Merrillville Kephart, Stewart B., Bluffton Marty, Alan T., Evansville Mishkin, Marvin E., Elkhart Moores, William B., Indianapolis Porsche, Timothy J., Elkhart Salomon, Jaime A., Indianapolis Shriner, Philip O., Fort Wayne Siebenmorgen, Paul, Terre Haute Spellmeyer, John C., Richmond Stout, David R., Seymour Sugarman, Donald R., Fort Wayne Wills, Cynthia L., Danville Winters, Peter L., Indianapolis

NEWS NOTES

New ISMA Members

Burton Boron, M.D., Elkhart, gastroenterology.

Jose C. Espinosa, M.D., Crawfordsville, vascular surgery.

Leonard R. Ferguson, M.D., South Bend, obstetrics and gynecology.

Scott A. Green, M.D., Indianapolis, family practice.

Timothy B. Hanrahan, M.D., Indianapolis, internal medicine.

R.M.C. Harrison, M.D., Washington, orthopedic surgery.

Gwendolyn Heaton, M.D., Madison, psychiatry.

Kathryn S. Hutchens, M.D., New Albany, gastroenterology.

Mohamed K. Jasser, M.D., Marion, internal medicine.

Daniel P. Linert, M.D., Valparaiso, cardiovascular diseases.

James W. Lowe, M.D., South Bend, anesthesiology.

Henry J. Matick, D.O., Vincennes, neurology.

Cherry L. Morphis, M.D., Indianapolis, family practice.

Michael M. Moss, M.D., Vincennes, radiology.

Rene T. Murillo, M.D., Evansville, general practice.

John F. Norton, M.D., Corydon, pediatrics.

Robert M. Pascuzzi, M.D., Indianapolis, neurology.

Thomas A. Pechin II, M.D., Granger, family practice.

Bruce D. Richmond, M.D., Indianapolis, diagnostic radiology.

Steven E. Roush, M.D., Bluffton, general practice.

John A. Scott, M.D., Indianapolis, diagnostic radiology.

Michael A. Sermersheim, M.D., Indianapolis, neurology.

Nahid Shahrooz, M.D., Indianapolis, dermatology.

Stephen M. Sladek, M.D., Mishawaka, emergency medicine.

Charles H. Steinmetz, M.D., Indianapolis, general preventive medicine.

Thomas N. Vahey, M.D., Indianapolis, diagnostic radiology.

Jay H. Weiss, M.D., Indianapolis, internal medicine.

Roland B. Wilson Jr., M.D., Huntington, anesthesiology.

Residents:

Elisabeth K. Datena, M.D., Indianapolis, internal medicine.

Suresh G. Devnani, M.D., Indianapolis, critical care medicine.

Dale M. Gaddy, M.D.. Indianapolis. otolaryngology.

Mark H. Grimm, M.D., Indianapolis, pulmonary diseases.

Cheryl A. Harris, M.D., Indianapolis, pediatrics.

Larry J. MacFarlane, M.D., Greenwood, general surgery.

Kathleen R. Martin, M.D., Louisville, Kv., internal medicine.

Gene C. Montgomery, M.D., Indianapolis, physical medicine and rehabilitation.

Carrie S. Nordyke, M.D., Indianapolis, family practice.

Richard A. Stoldt, M.D., Fort Wayne, family practice.

Michael J. Welsh, M.D., Indianapolis, family practice.

High Efficiency Lines Improve MRI Helium Transfer

Airco Gases has introduced newly designed helium transfer lines that substantially boost the efficiency of magnetic resonance imaging (MRI) transfilling operations.

Airco's new high efficiency transfer lines involve a proprietary design using an advanced laminar and vacuum insulation. The first-generation lines for transfer of cryogens were designed with vacuum insulation only, yielding transfer efficiencies of approximately 70%. The new design enables liquid helium transfer efficiencies of up to 80-85%.

During the transfer of liquid helium from a dewar to the MRI magnet, a significant amount of the supercold $(-452\,^{\circ}\,F)$ liquid vaporizes as it absorbs heat from the outside environment. Once the helium is in gaseous form, it loses its value as a refrigerant for the MRI superconducting magnet and is essentially wasted.

With a helium boil-off rate of .5 liters/hour, which is representative of an MRl system installation, the new transfer lines can reduce annual helium consumption by 770 to 1,090 liters. Given the relatively high cost of liquid helium, usage of the enhanced transfer lines can result in substantial savings for an MRI operator. These new transfer lines are available on a leased basis for MRI owners and operators.

'The Birth of Neonatology'

"The Birth of Neonatology: Indiana University" by Dr. Byron K. Rust, formerly a practitioner of pediatrics in Indianapolis and now retired and living in Florida, is a most interesting account of the development of neonatology. It comprises a neat account of an important part of medical history as it relates to the painstaking and tedious process of improving the clinical care of newborns.

What is now accomplished in intensive care pediatric wards was begun in and near the obstetrical departments at the Indianapolis City Hospital and the Coleman Hospital in the early 1930s. Dr. Rust's account emphasizes the energy and attention to detail which must be expended to gain clinical improvements in a setting where, to all effects, improvements are regarded as dangerous.

Dr. Rust also includes in his book an account of his services rendered in Karachi, Pakistan. Indiana University School of Medicine, in 1964-65, provided many clinical and basic science faculty members of I.U. as visiting professors to the Jinnah Post Graduate Medical Center there. This account, like the story of the growth of neonatology in Indianapolis, is intensely interesting, and since both these accomplishments have been underreported, they form a part of medical history.

This illustrated, privately printed and beautifully bound, 105-page book may be obtained at the modest cost of \$10, postage paid, by writing Dr. Byron Rust at 8400 Vamo Road, Sarasota, Florida 34231.



Take A Chance

by Arthur R. Pell, Ph.D. Consultant, Dale Carnegie & Associates, Inc.

When Alex Farber was a hoy in Chicago, he and his friends were ardent Cuhs fans. They were elated when their team won and unhappy when they lost. Alex felt the losses more than his friends. When the Cubs lost, he would be deeply depressed. After a particularly bad season. Alex thought "It isn't worth it. I'm never going to get so involved with a team that I can feel this had." From that time on he refused to commit himself to the Cubs or any team in any sport.

Alex carried this concept into all aspects of his life. His philosophy was "If I don't become too involved, I can never he hurt." In his school and in his jobs, he always took the middle course. Indeed, Alex never did get hurt, but neither did he ever have any real joys. By not taking the chance that someone or something he supported might not work out, he avoided the "agony of defeat," but never experienced "the thrill of victors."

Commit Yourself.

Dr. Robert Jarvik worked for years to develop an artificial heart. It had never been done and he was told by colleagues and other "experts" that it could never be done "Jarvik was not only willing to take the chance that all of his work would be for naught, but he was committed to keep trying until he did succeed.

Inventors and innovators have always faced ridicule. We have read how Fulton's steamboat was dubbed "Fulton's folly" and how the first automobiles were greeted with the scornful invective, "Get a horse." Edison had tried and failed hundreds of times before succeeding in inventing the light bulb. Inventors must commit themselves and be willing to suffer the taunts of others and bear the many doubts and disappointments of deleat after defeat before reaching their goals.

Say What You Believe

Liz Minor was upset. All of the people in the group seemed to agree that the idea under discussion would solve their problem. If she expressed her disagreement, the others might consider her a rebel. The sale course was to remain silent, but Liz was sure that the group had overlooked an important aspect of the problem. Liz took the risk of being rejected, but by saying what she believed, she enabled the group to look at the problem from a different angle and come to a more effective conclusion.

Observe the Turtle.

The turtle is a moving fortress. Its impervious shell protects it from all harm. However, if the turtle wants to move, it must stick its head and neck out from the shell, exposing it to the dangers of the environment. Like the turtle, if we want to move ahead we cannot surround ourselves with perfect protection. We have to stick out our necks in order to progress.

Laking risks does not mean one must be a daredevil Reasonable people take reasonable risks, but by definition, a risk may not succeed. Successful business executives take risks with every decision they make. However, they maximize their chance of success by careful research and analysis before making the decision. But when that decision finally has to be made, the manager must be willing to risk the possible loss of money, time, energy and emotion. Without risk, there is no possibility of gain

Champions Take Risks

It is the end of the ninth inning. The Blue Tays lead the Yankees 2 to 1. The first two hitters strike out. Dave Winfield, the Yankee's ace hitter is at bat. The ball comes straight across the plate. Wham' a clean hit. Winfield races to first. He makes it easily. Should be try for a double" In microseconds. Dave must decide if he should play it safe or take the risk of trying for that extra base which would put him in a scoring position. If he fails, the game is over, but by taking a chance he increases the possibility of turning defeat into victory. Winfield is a risk taker and if there's even a slightly better than even chance of success, he'll try for the double. Champions in life as well as in sports will take chances. That is what makes them champions.

What is the worst that can bappen?

In his book *How to Stop Worring and Start Living*. Dale Carnegie advises that when facing trouble "Ask yourself What is the worst that can possibly happen", "prepare to accept the worst; try to improve on the worst."

These principles can be applied in determining whether or not to take a chance on an innovative, radical or just different approach to a problem

Oil Baker had not been able to obtain an appointment with Stan Green, the purchasing manager of a prospective customer. He had phoned, written letters and even "sat on his doorstep"—all to no avail. His colleagues advised him to forget Green and use his energies and time to develop other leads. But Gif was stubborn. There must be some way to get Green's attention. He learned that Green was to be a speaker at an industry workshop. "If I attend the workshop," thought Gif, "I can approach him after his talk, ask him some questions and then identify myself, so he'll at least know who I an."

His sales managers and co-workers discouraged this "He'll be so mad he never will speak to anybody from this company again."

Gil responded by applying Carnegie's principles. "What is the worst that could happen". He won't do husiness with us That's not so bad because he isn't doing business with us now, so we have nothing to fose." "Prepare to accept the worst. If I do not make an impression on him at the meeting. I'll give up working on that account." "Try to improve on the worst: By carefully planning the questions I ask, I can demonstrate that I am truly knowledgeable about his business and this may overcome his reluctance to see me."

By taking a chance, Gil reached an "unreachable" prospect and opened a very profitable account for his company

We must all take risks if we want to make progress in our jobs and in our lives. By careful analysis we can minimize the chances of failure, but we can never eliminate it. Without pain there is no gain. By always playing it safe, we may avoid that parn, but we will never feel the great joy and satisfaction that results from overcoming the obstacles and reaching our goals

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

OBITUARIES

Hugh A. Miller Jr., M.D.

Dr. Miller, 73, formerly of Elkhart, died Aug. 16 at his home in Constantine, Mich.

He was a 1937 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. Miller retired in 1974 from Miles Laboratories in Elkhart, where he was vice-president of medical affairs and the senior scientific officer of the Consumer Products Division. He had practiced internal medicine in Eklhart 11 years before joining Miles.

Clayton G. Weigand, M.D.

Dr. Weigand, 82, a retired nutrition specialist for Eli Lilly and Company, died Aug. 25 at St. Vincent Hospital, Indianapolis.

He earned the M.D. degree in 1929 at the University of Nebraska. He was an Army-Air Force veteran of World War II.

Dr. Weigand worked for Lilly from 1938 until he retired in 1969; he was credited with the development of 50 leading vitamin products. He was a member of numerous professional organizations including the Association of Military Surgeons, American Geriatric Society, American Federation for Clinical Research, Aero-Medical Society, Indiana Academy of Science and the Indiana Pediatric Society.

Philip W. Rothrock, M.D.

Dr. Rothrock, 70, a retired Lafayette physician, died Aug. 4 at St. Elizabeth Hospital, Lafayette.

He was a 1941 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Rothrock, who retired in 1984, was a past president of the Tippecanoe County Medical Society. He was a diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians. He also was a member of the American College of Cardiology and the American and Indiana Societies of Internal Medicine.

William F. Montgomery, M.D.

Dr. Montgomery, 75, formerly of Indianapolis, died Aug. 26 at George Washington University Hospital.

He was a 1938 graduate of Indiana University School of Medicine.

Dr. Montgomery had been an Indianapolis surgeon from 1942 to 1967, working mostly at Methodist and St. Vincent Hospitals. In 1967 he joined the U.S. State Department and served as chief medical officer in Colombia and Nigeria before becoming director of health care programs; he retired in 1979. He was a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons.

Wendell E. Brown, M.D.

Dr. Brown, 79, a retired Indianapolis pediatrician, died July 28 at Methodist Hospital, Indianapolis.

He was a 1934 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. Brown retired from private practice in 1979, but then served on the faculty of the Family Practice Program at Community Hospital and as a preceptor in the Pediatrics Residency Program at Methodist Hospital. He was an emeritus associate professor of pediatrics, I.U. School of Medicine. He was a member of the American Academy of Pediatrics, the American Diabetes Association and the ISMA Fifty Year Club.

Rohan Tiruchelvam, M.D.

Dr. Tiruchelvam, 44, an anesthesiologist at Marion General Hospital, died Aug. 9 at St. Vincent Hospital, Indianapolis.

He received the M.D. degree in 1969 from the University of Ceylon at Colombo, Sri Lanka.

Dr. Tiruchelvam completed his residency at Johns Hopkins Hospital, where he taught anesthesiology before settling in Marion. He was Board-certified and was a fellow of the American College of Anesthesiology.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of Indiana Medicine.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

Irvin W. Wilkens, M.D. J. Neill Garber, M.D. J. Melvin Masters, M.D. Nancy A. Roeske, M.D. Eugene S. Rifner, M.D. Elsie A. Reid Lester D. Bibler, M.D. Lloyd A. Vogel, M.D. Arvine G. Popplewell, M.D. Mildred Ramsey Richard Sharp John Bush

William W. Bourke, M.D.

Dr. Bourke, 84, a retired Marion psychiatrist, died Sept. 1 in a local health care center.

He received the M.D. degree in 1927 from St. Louis University. He was an Army veteran of World War II.

Dr. Bourke had lived in Marion since 1972; he served as a consultant in psychiatry at the Marion VA Medical Center until 1977. Previously, he had worked in South Dakota, Iowa and Minnesota. His memberships included the American Psychiatric Association, American College of Physicians and the Association of Medical Superintendents of Mental Hospitals.

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(See instruction on reverse)

COMMERCIAL ANNOUNCEMENTS.

PHYSICIANS, ALL SPECIALTIES—Immediate full-time openings available in most specialties in Indiana and nationwide. Minimum first-year salaries guaranteed \$60,000-\$150,000. Contact Jeff Bocock, Hunter-Lawyer Medical, 8902 N. Meridian, Indianapolis, IN 46260. Call (317) 848-2005.

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potients

Prevention at hypokalemio requires porticular attention in patients receiving digitalis and diuretics for cangeshive heart failure, hepotic cirrhosis and oscites, states at aldosterone excess with narmal renal function, potassium-losing nephropathy, certain diarrheal states, or other states where hypokalemia is thought to represent porticular added risk to the patient.

Inough to represent porticular agade at six to the patients in patients with hepotal critinous and assettes, sudden afterations of electralyte bolance may precipitate hepatic encephalopothy and como. Treatment in such patients is best initiated in the hospital with small doses and careful monitoring of the potent's clinical status and electrolyte bolance. Supplemental potassium and/or spiranataclone may prevent hypokalemia and metabolic alkatosis in these potents in cats, dogs and guineo pigs, Buriex has been shown to produce otoloxicity. Since Burnex is about 4 of 60 times as potent as turnsemide, it is anticipated that blood levels necessary the produce otoloxicity will rarely be achieved. The patential for atataxicity increases with introvenous therapy, especially of what doses.

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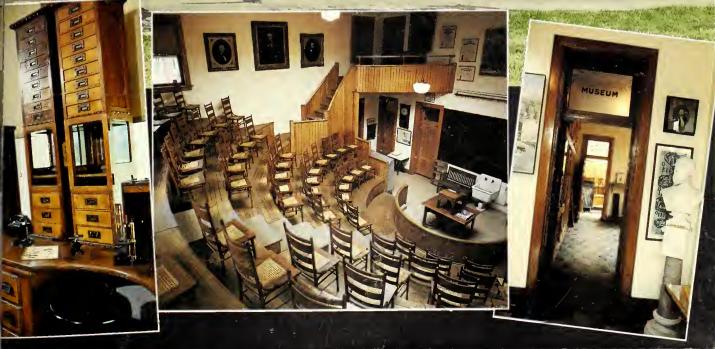
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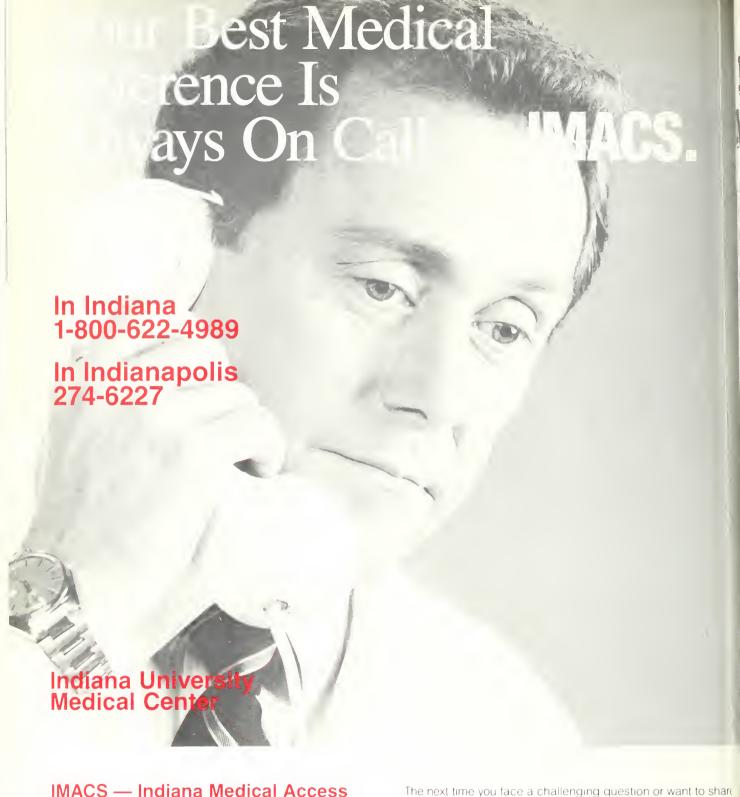
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INDIANA MEDICINE

ABOUT THE COVER

The Old Pathology Building, located on the grounds of Central State Hospital in Indianapolis, is the home of the Indiana Medical History Museum. The building's exterior and scenes from inside are featured on our cover. For a detailed look at this historic building, see page 1190.—PHOTOS BY JOHN MAY

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STETHOSCOPE EXAMINING STATE & NATIONAL MEDICAL ISSUES

Physicians have until Dec. 31, 1987 to make Medicare "participating and non-participating" decisions for 1988...doctors should consider impact of budget reconciliation on the 1988 prevailing charge levels before making the final decision.

Since carriers figured 1988 MAACs before the Congressional budget reconciliation process was completed, it is likely actual 1988 MAACs will vary from those the carriers provided at the end of November. <u>SUGGESTION: doctors</u> should personally calculate their own MAACs.

Doctors who aren't participating and don't wish to need take no action. The same is true for those who are participating and wish to continue.

The Health Care Quality Improvement Act has been amended... malpractice attorneys will not have broad access to physician data bank information...The new provision permits disclosure to plaintiffs' attorneys only when a health provider failed to consult with the data bank. The AMA has submitted a bid to operate the data bank, but a contract award will not be made until Congress appropriates funds.

The Health Care Finance Administration's release of data on <u>mortality rates</u> for hospitalized Medicare patients is expected to cause a controversy. HCFA says the data measure hospital performance.

The AMA questions technical flaws in HCFA's methodology.

What should you tell your patients if you are on the staff of a hospital named in the study?

- 1. Point out the nebulous relationship between mortality and quality of care.
- 2. Explain that the data do not take into account enough factors specific to each hospital.
- 3. Note any peer review standards or quality assurance programs your hospital employs.

The AMA has told the Physician Payment Review Commission that it has great concerns with the Reagan Administration's new proposal to create Medicare PPOs to control expenditures. Under the proposal, Medicare beneficiaries would receive economic rewards if they received care from "conservative" physicians who conform to standards of accepted practice and utilization limits set by HHS.

AMA objects because there is no clear methodology of how a physician will fit into this classification.

HCFA is now saying that Medicare appeals by telephone will be voluntary...they will not take the place of face-to-face appeals.

HHS is still considering a new physician fee freeze to limit increases in Medicare Part B payments. Increased utilization review is also being studied.

The AMA will consider at its Interim Meeting the AMA Council on Ethics and Judicial Affairs report on AIDS. The Council recently issued its report which concludes that doctors may not ethically refuse to treat a patient with AIDS.

The report indicates doctors are ethically obligated to respect the rights of privacy and of confidentiality of AIDS patients and seropositve individuals.

The report advises what to do when no reporting statutes exist and when physicians know that a seropositive person is endangering a third party:

- 1. Attempt to persuade the infected patient to cease endangering the third party;
 - 2. If persuasion fails, notify authorities and
 - 3. If authorities take no action, notify the endangered third party.

IN INDIANA...

More than 100 health and medically related bills are expected to be introduce into the upcoming 30-day session of the Indiana General Assembly.

Medical Malpractice will again be a focus as the legislature is expected to act on an interim study committee recommendation that the Department of Insurance be computerized. This may have impact on how the Patient's Compensation Fund is administered by that agency. Territorial rates may also be addressed.

Look for a bill to <u>prohibit physician dispensing</u>. ISMA will continue to resist attempts change the current practice of patients having the choice of obtaining their medications from the physician or from a pharmacy.

Legislation will be introduced in the 1988 session to prohibit the <u>free</u> <u>distribution</u> of tobacco to minors. The proposal will be in the form of an amendment to Indiana's new law which increased the minimum age for the sale of tobacco to minors to 18.

ISMA will also seek legislation to comply with a 1987 House of Delegates' action supporting a smoking ban for all hospitals and health facilities.

Expect to see several bills dealing with AIDS and drug testing. The Interim Study Committee on Public Health has suggested several educational recommendations, but the package of bills also addresses mandatory notification, the establishment of AIDS advisory committees within local school boards, and mandatory education of physicians and dentists on AIDS.

Several groups will seek increased funding from additional taxes on alcohol to pay for maternal and child health programs...proposal raises questions regarding funding, coordination and delivery of services, identification of persons who need the services and continuity of care.

MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



BISEWHERE in this issue of IN DIANA MEDICINE is an article regarding the Indiana Medical History Museum (The Old Pathology Building), that is now a one-of-a-kind structure. That's because the few remaining similar structures in other parts of the country have been razed—which is unfortunate.

Indiana's architectural gem is now a lone treasured artifact, a state-of-the-art laboratory complex, representative of medicine in the progressive era of American history. A fund-raising campaign to assure the long-term survival and continuing educational use of this building will soon get underway.

The amphitheater of this building is as it was at the turn of the century, when Dr. Frank B. Wynn, one of its four original teachers, stood at the podium and lectured to the students of the Medical College of Indiana.

Dr. Wynn, president of the ISMA in 1915, was advocating as early as 1898 that the organization set up an archive and museum section, but this has become a reality only in recent years.

Dr. Wynn originated the Annual Scientific Exhibit Program of the AMA in 1899, an activity with which he continued to participate until his death in 1922 at the age of 62 years. In 1915 he was appointed chairman of the Indiana Centennial Commission, that later became the Indiana Historical Bureau, a state agency for promoting historical collecting and preservation. And Wynn remained active in this area until his death.

Were it not for these two activities, which were very time-consuming, Dr. Wynn would undoubtedly have started a program for the ISMA for the preser-



Dr. Frank B. Wynn

vation of Indiana's hitorical medical documents and artifacts.

Wynn is remembered primarily for the things he did unrelated to medical practice. He was, however, a superb diagnostician. In an age of relatively few laboratory aids to diagnosis, the physician relied largely on his senses for diagnostic information. Wynn had unusual acumen and technical ability. He could see, hear, smell and feel subtle manifestations of disease where others of lesser sensibility would fail. And yet he was a very modest person.

The reader of this page is aware of the frequency of Dr. Wynn as a subject. The reason for this is that at present he is essentially forgotten. His name is not associated with any Indiana structure or institution, yet he performed more essential services for his profession and for the people of the state than perhaps any other Indiana physician.

To help overcome this deficit, the Medical Educational Resources Program of I.U.M.C. is now preparing a manuscript and collecting the materials needed to begin an educational documentary on his life and service to humanity. The medical research librarian at the Indiana Historical Society's library, who is very knowledgeable of Indiana's physicians of vesterday, has provided a tremendous amount of Wynn data. Her comment on reading his material was that Indiana has never had a physician like Wynn; that since his loss, no one has taken his place. He stands alone, and his shadow is long.

Dr. Wynn's contemporaries had only kind comments for him. Dr. John Hurty, for example, stated: "Frank Wynn did not know the art of making enemies. If he harbored envy and jealousy I never perceived it. His sincerity and conscientiousness were evident. His attitude was always open, honest and generous...."

He is best described in the seventh of his Ten Commandments of Medical Ethics:

"VII. Gentlemanly Conduct. Thou shalt not prate of cases, nor countenance unseemly boasting of thy achievements in the lay press. Always a gentleman, let thy conduct be reserved but without cowardice; courteous but without flattery; dignified but of warm heart; tender in ministration but firm in command; clean of body, speech and mind."

Dr. Wynn's personal, social and professional behavior followed this prescription to the letter.

How More Than 3000 Doctors Have Eased The Pain Of Managing A Practice.



If your practice is like a lot of others, you often spend more time on office problems than on the health problems of your patients.

Our one easy-to-use, fully-integrated computer system can take care of billing, provide financial updates, help you market your practice. And give you more time to do what you went to medical school for.

"We've found that Medic saves us many hours of paperwork every week. A couple of hours of work is down to 15 minutes."

Jeanine Mielke, office manager, Hahn, Hoard & Taub, M.D., P.A., Boca Raton, Florida

This urology practice uses Medic Computer Systems to electronically transmit many Medicare claims every day. A job that once took a large part of the business day is now done in minutes. And that's only one of the ways that Medic saves time on paperwork.

"It's helped our cash flow tremendously."

Mike Griga, general manager of Mayfield Neurological Institute, Cincinnati, Ohio

Changing the billing system from once a month to once a week is just one way Medic has improved the bottom line of the nation's largest neurosurgery group.

"Any time we've had a problem, Medic has been immediately responsive. They bend over backwards to suit their customers. It's the best money we have ever spent."

Wynne Vaughan, office manager, Capital Pediatric and Adolescent Center, P.A., Raleigh, North Carolina

We'll do whatever it takes to keep your system working. Day or night. We have a toll-free STAT line to handle questions and problems. And there's a STAT PLUS line from our support center to your system for software updates and diagnoses.

"Our practice has doubled and we have not had to add additional billing personnel. Medic has been able to handle whatever we've asked of it."

Nancy Psimas, office coordinator, Portsmouth Orthopaedic Associates, Portsmouth, Virginia

The Medic system can ease the process of sending statements and reduce the number of uncollected bills. Plus, our easy-to-understand printouts help you keep better track of your financial condition.

"Medic's extensive training program for our staff made it easy to introduce the system. We recommend it highly." Tessa Horne, administrator, Morgantown Ear, Nose & Throat Clinic, Morgantown, West Virginia

"We love the training program. And the updates they do really help," Ms. Horne said. When a practice brings in over 200 patients a day as this one does, the business office has to run smoothly. "Medic does everything we need. It's great."

So if you want to increase the efficiency, productivity and profitability of your practice, take a look at the Medic Computer System.

Over 3000 physicians in more than 800 practices throughout the U.S. are calling it a minor medical miracle.

medic computer systems

8601 Six Forks Rd., Ste. 300, Raleigh. NC27615 Ph. 919-847-8102. In NCCall: 1-800-822-2914 In Western US Call: 1-800-541-7717 In Eastern US Call: 1-800-334-8534

Other Offices: Orlando, Ann Arbor, Chicago, Cincinnati, Pittsburgh, Richmond, Atlanta

WHAT'S DEW?

Professional Press Books has a new book—"Contact Lens Perspectives" by Richard M. Hill, O.D., Ph.D., Ohio State University, College of Optometry. This 130-page book is an in-depth study of tear, tissue and lens characteristics, designed to assist the student and practitioner to gain a full understanding of these topics. Hard cover, illustrated, \$22.50.

"Guidelines for the Selection of Office Computer Systems for Family Physicians" is the title of a new book available from the American Academy of Family Physicians. The cost is \$8 for members and \$20 for nonmembers; both prices include postage and handling.

Lederle announces that a new study reveals that almost \$90 million could be saved each year if all two-year-old U.S. children are vaccinated against Haemophilus influenzae type b (Hib) disease. The study, published in the September issue of *Pediatrics*, concludes that health care and social costs of Hib disease currently approximate \$2 billion annually.

Schering Laboratories has introduced a new topical steroid, the first in the mid-potency category to be available solely for once-a-day use to treat the inflammation, itching, crusting and scaling associated with psoriasis and other skin diseases. Called ELOCON® mometasone furoate, 0.1 percent, the prescription product was specifically designed for enhanced efficacy against a broad range of inflammatory skin disorders with less of the side effects usually found in mid-potency corticosteroids. It is available in ointment and cream.

Astro-Med, Inc., has introduced a new 8-channel direct writing recorder, the MT-8800. Designed for cath lab, cardiac care, operating room and ICU monitoring and test analysis, the writing recorder uses thermal chart paper instead of photographic recording paper. The MT-8800 is all electronic and operates without pens, styli or other moving parts.

Ross Laboratories has announced the availability of JEVITYTM Isotonic Liquid Nutrition with Fiber, a fiber containing high nitrogen, isotonic tube feeding. JEVITY is designed to meet general tube-feeding needs, as well as the special needs of the long-term tube feeder. The fiber source and fiber level in JEVITY may be useful in the dietary management of tube-feeding intolerance such as diarrhea and constinution. JEVITY meets 130% of the US RDA for protein, 100% of the US RDA for vitamins and minerals and 120% of the US RDA for calcium in 1400 calories. Ultra-trace minerals (selenium. chromium, molybdenum) and conditionally essential nutrients (carnitine, taurine) have been added to minimize the potential for deficiency in the longterm tube feeder. JEVITY is lactose free, gluten free and kosher.

Hewlett-Packard has upgraded its HP 77020 phased-array ultrasound-imaging system with color flow imaging capabilities. The enhancement upgrade will be delivered without charge to owners of the HP 77020 Revision K systems. The upgrade adds new color maps to provide sharper definition when played back on videotape and improved display of turbulent blood flow.

Advance Design International has a new desktop letter folding machine for executive letters in preparation for insertion into business size envelopes. It has no on/off switches, no sideguides and no foldsize and separator adjustments. The Execufold will accept from one to three-page letters, stapled or unstapled, with no adjustments.

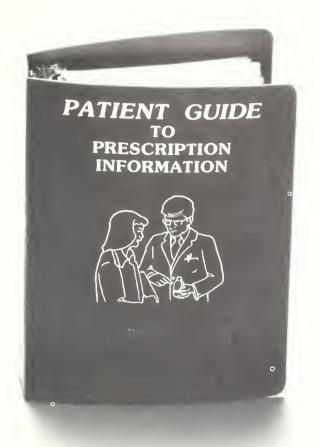
News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by Indiana Medicine or by the Indiana State Medical Association.

"Health Promotion Evaluation" is the title of a new book published by the National Wellness Institute at the University of Wisconsin-Stevens-Point, 54481. This state-of-the-art volume brings together in one source, the significant findings from evaluations of 10 of the most sophisticated, on-going health promotion programs in the country. Blue Cross and Blue Shield of Indiana is one of the 10 programs covered. \$25.95 postpaid.

How do you obtain accurate determinations of blood pressure, pulse rate and respiratory rate in a noisy environment on a patient who should not be divested of heavy clothing? Arthur D. Little, Inc. has devised a light-weight, portable instrument that will display visual data of vital statistics by way of a blood pressure cuff which will register the data despite heavy clothing. It operates with a rechargeable battery good for 16 hours at one charge. Respiratory rate is evidenced by a light that comes on when the patient exhales and turns off when patient inhales. This sensor uses a mouth mask that detects the presence of carbon dioxide. Recommended especially for airplane and helicopter ambulances and for rescue work at fires and large disasters. A.D.L. is seeking a manufacturer to improve and manufacture the device after its clinical trial with the U.S. Air Force.

The Cosmetic, Toiletry and Fragrance Association (CTFA) is cooperating with the American Cancer Society to develop a program to help cancer patients deal with the appearance problems resulting from chemotherapy and radiation treatments. In many cases, patients feel much better and sport an outgoing personality when carefully planned cosmetic programs are applied. The public service program is called "Look Good ... Feel Better."

"The Unseen Injury: Minor Head Trauma" is a two-part videotype series available from the National Head Injury Foundation for education in the problem and instructions for physi-CONTINUED ON PAGE 1228



This book about drugs is different... it's written in English

Patients often have questions about their prescription drugs, even after their doctor has taken the time to discuss their medication with them.

That's why every Peoples Drug Store has a copy of the "Patient Guide to Prescription Drugs". It's an authoritative directory that provides the drug information patients need most. It informs them about side effects, dosages, and almost

everything they need to know in order to take their medication properly.

And, unlike many books on drugs, it does it all without complicated jargon, using clear, straightforward writing that's easy to understand. You see, when it comes to helping people get the most from their prescriptions Peoples wants to make sure we're all talking the same language.

Every Peoples has an unlisted phone that's reserved only for doctors and answered only by pharmacists. Please call your local store to obtain the number.



FUTURE FILE

Indiana University CME

Feb. 11: Current Concepts in Management of Diabetes Mellitus; Reid Memorial Hospital, Richmond.

Feb. 25: Dilemmas of Dementias; Evansville Center for Medical Education, Evansville.

For more information, call Melody Dian, CME, I.U. School of Medicine – (317) 274-8353.

Family Practice Review

"Family Practice - 1988 Twelfth Annual Spring Refresher and Board Examination Review" will be conducted March 22-26 at the Towsley Center, University of Michigan, Ann Arbor. The course offers 33.75 credits in Category I of the Physicians Recognition Award. Contact Gayle Fox, Office of CME, Towsley Center-Box 0201, Michigan Medical School, Ann Arbor, Mich. 48109—(313) 763-1400.

Pathology

The annual meeting of the U.S. and Canadian Academy of Pathology will be held Feb. 28 to March 4, 1988, at the Washington Hilton, Washington, D.C.

For more information, contact Dr. Nathan Kaufman, Bldg. C, Suite B, 3515 Wheeler Road, Augusta, Ga. 30909—(404) 733-7550.

RIM

"He's from 'General llospital' and would like to go through your files for ideas."

The Journal of the American Medical Association publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Primary Care Update

"The Second Annual Update on Primary Care" is the title of an educational seminar to be conducted by the Dept. of Pediatrics, Loyola University Stritch School of Medicine at The Ranch in Steamboat Springs, Colo., March 14-18.

Contact Larry G. McLain, M.D., Dept. of Pediatrics, Loyola University Medical Center, 2160 S. First Ave., Maywood, Ill. 60153—(312) 531-3195.

Terminal Care

"Terminal Care: Consultations on Clinical and Policy Problems" is the title of a CME workshop sponsored by "Concern for Dying" and Case Western Reserve University School of Medicine. It will be conducted Feb. 5-8 at Mariner's Inn, Hilton Head, S.C. Registration fee is \$175.

The correspondent is Penny Weingarten, Program Coordinator, Concern for Dying, 250 W. 57th St., Rm. 829, New York, N.Y. 10107 – (212) 246-6962.

Medical-Legal Issues

"Current Medical-Legal Issues in Indiana" will be the subject of the 5th annual SIMBA South seminar, to be held during spring break (March 28-April 1, 1988)

The seminar is offered by Seminars for Indiana Medico/Legal Bar Association (SIMBA), Indianapolis. Faculty will include well known Indiana physicians and attorneys. Tuition is \$350. CLE and CEU credits can be earned.

For more information, call (317) 871-6222 or write SIMBA South V, 8402 Harcourt Road, Suite 220, Indianapolis 46260.

Resort Seminars

Resort Seminars is again offering a series of medical and professional business management seminars, to be held in Snowmass, Vail and Keystone, Colo., beginning Dec. 13 and ending April 1, 1988.

The four-day seminars are directed to the physician, lawyer, medical/dental professional and the business owner/manager. Treasury Reg. 1.162-5 permits tax deductions for educational expenses.

For information contact Resort Seminars, P.O. Box 5212, Snowmass Village, Colo. 81615—(303) 923-5850 or 1-800-542-5428.

Tuberculosis Update

A tuberculosis update conference will be conducted Jan. 27-28 at the Radisson Plaza Hotel, Indianapolis.

The conference is aimed at physicians specializing in pediatrics, geriatrics, pulmonary diseases, family practice and infectious diseases. It is being sponsored by the American Lung Association of Indiana and the Indiana Thoracic Society. AMA CME credit will be available.

For more information, contact the ALA of Indiana, 8777 Purdue Road, Suite 310, Indianapolis 46268—(317) 872-9685.



"I didn't have a consultant or my marks would have been better."

of or irescribing, see complete prescribing information in SK&F CO. of a bor PDR. The following is a brief summary.

IN VING

Tring is not indicated for initial therapy of edema or hypertensin-dema or hypertension requires therapy tilitated to the individual. If i, combination represents the dosage so determined. Its use m, e more convenient in patient management. Treatment of hyperte in and edema is not staffic, but must be reevaluated as condis sin each patient warrant.

on idications: Concomitant use with other potassium-sparing agents spironolactone or amiloride. Further use in anuria, progressive in a hepatic dysfunction, hyperkalemia. Pre-existing elevated serum talum. Hypersensitivity to either component or other sulfonamide in drugs.

an use on not use potassium supplements, dietary or otherwise, lik hypokalemia develops or dietary intake of potassium is markedly and it supplementary potassium is needed, potassium tablets no not be used. Hyperkalemia can occur, and has been associated it irdiac irregularities. It is more likely in the severely ill, with urine lies stan one liter/day the elderly and diabetics with suspected or irmed renal insufficiency Periodically, serum K* levels should be ined! If hyperkalemia develops substitute a thiazide alone, restrict ake Associated widened ORS complex or arrhythmia requires not additional therapy. Thiazides cross the placental barrier and prin cord blood. Use in pregnancy requires weighing anticipated or sognish possible hazards, including fetal or neonatal jaundice or sognish possible hazards, including fetal or neonatal jaundices or additional of the market of the control of the placental body of the control o

with history of allergy or bronchial asthma. Possible exacerbation or pition of systemic lupus erythematosus has been reported with hie duretics.

Ty utions: The bioavailability of the hydrochlorothiazide component of the local state of the bioavailability of the single entity hetically a patient transferred from the single entities of frametering in ydrochlorothiazide may show an increase in blood pressure or fluid of ion. Smilarly it is also possible that the lesser hydrochlorothiazide in alability could lead to increased serum potassium levels. However, as sive clinical experience with Dyazide's suggests that these conditions and or been commonly observed in clinical practice. Angiotensin-xiring enzyme (ACE) inhibitors can elevate serum potassium, use viaution with Dyazide's suggests that these conditions pullarly important in patients vomiting excessively or receiving eleval fluids, and during concurrent use with amphotericin B or costeroids or corticotropin (ACTH). Periodic BUN and serum prinnie determinations should be made, especially in the elderly altics or those with suspected or contirmed renal insufficiency. Dilative effects of the drug may develop in patients with impaired fenal in or thiracides should be used with caution in patients with impaired hit function. They can precipitate coma in patients with impaired hit function. They can precipitate coma in patients with impaired hit function. They can precipitate coma in patients with impaired hit function. They can precipitate coma in patients with severe liver disserible of the drug may develop in patients with impaired hit function. They can precipitate coma in patients with severe liver disserible of the drug may develop in patients with severe liver disserible of the drug may develop in patients with severe liver disserible of the drug may develop in patients with severe liver disserible of the drug may develop in patients with instenses. In the distension of the patients with severe liver disserible of the distension of the patients. The diste

verse Reactions: Muscle cramps, weakness, dizziness, headache, /mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other imatological conditions; nausea and vomiting, diarrhea, constipation, ner gastrointestinal disturbances; postural hypotension (may be gravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, resthesias, icterus, pancreafifis, xanfhopsia and respiratory distress sluding pneumonitis and pulmonary edema, transient blurred vision, aladentis, and vertigo have occurred with thiazides alone. Tramterene is been found in renal stones in association with other usual calculus imponents. Rare incidents of acute interstitial nephritis have been ported. Impotence has been reported in a few patients on 'Dyazide', though a causal relationship has not been established.

upplied: 'Dyazide' is supplied as a red and whife capsule, in boftles of 300 capsules; Single Unif Packages (unit-dose) of 100 (intended for stitutional use onty); in Pafient-Pak™ unit-of-use bottles of 100.

S-DZ L42

In Hypertension*... When You Need to Conserve K+

Remember the Unique Red and White Capsule: Your Assurance of SK&F Quality

Serum K⁺ and BUN should be checked periodically (see Warnings and Precautions)



Potassium-Sparing

DYAZIDE®

25 mg Hydrochlorothiazide/50 mg Triamterene/SKF

Over 20 Years of Confidence

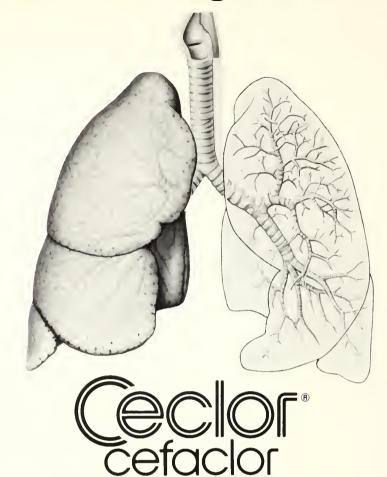
The unique red and white Dyazide* capsule: Your assurance of SK&F quality





a product of SKSF CO.
Carolina PR 00630

Consider the causative organisms...



250-mg Pulvules® t.i.d. offers effectiveness against the major causes of bacterial bronchitis

Haemophilus influenzae and Streptococcus pneumoniae (ampicillin-susceptible and ampicillin-resistant)

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Ceclor* (cetaclor)

Summary Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by Streptococcus pneumoniae, Haemophilus influenzae, and Streptococcus pyogenes (group A β -hemolytic streptococci).

Contraindication:

Known allergy to cephalosporins

Warnings

CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PRINCILLIN-SENSITIVE PATIENTS PENICILLINS AND CEPHA-LOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY POSSI-BLE RE ACTIONS INCLUDE ANAPHYLAXIS

Administer cautiously to allergic patients
Pseudomembranous colitis has been
reported with virtually all broad-spectrum antibiotics. It must be considered in differential
diagnosis of antibiotic-associated diarrhea
Colon flora is altered by broad-spectrum
antibiotic treatment, possibly resulting in
antibiotic treatment, possibly resulting in

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Cector. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely
- Rarely, reversible hyperactivity, nerv-

ousness, insomnia, confusion, hypertonia dizziness, and somnolence have been reported • Other: eosinophilia, 2%, genital pruritus o vaginitis, less than 1%; and, rarely, throm

bocytopenia. Abnormalities in laboratory results of uncertain

- etiology
 Slight elevations in hepatic enzymes
 Transient fluctuations in leukocyte count
- Transient fluctuations in leukocyte cor (especially in infants and children).
- Abnormal urinalysis; elevations in BUN of serum creatinine.
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest* tablets but not with Tes-Tape* (glucose enzymatic test strip, Lilly).

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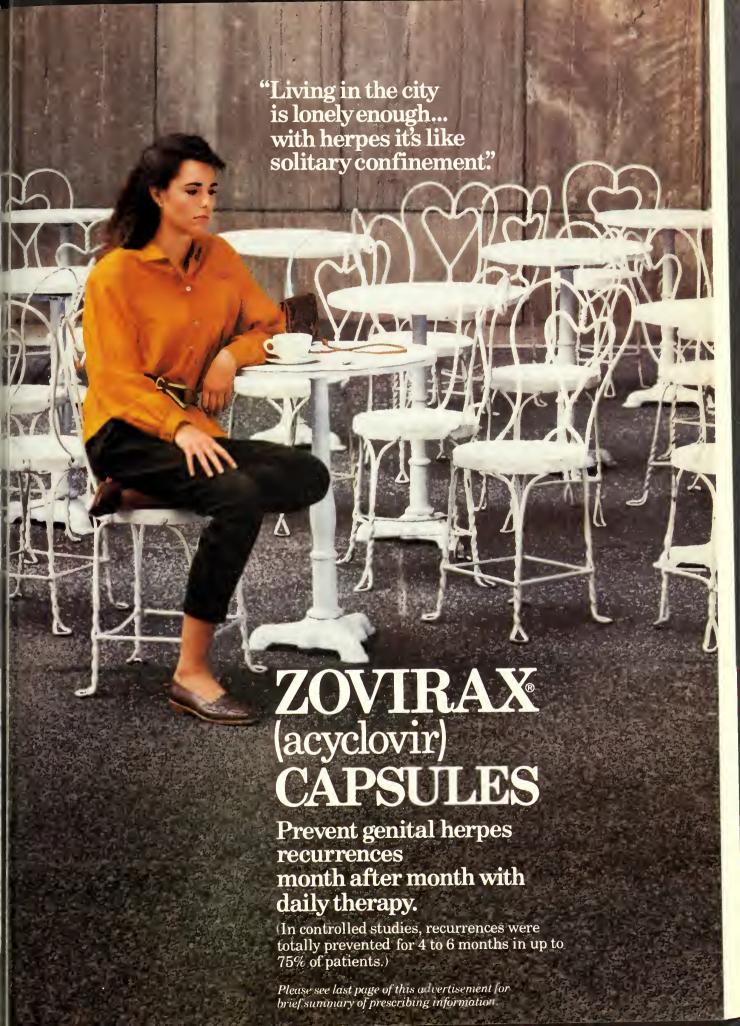
Penicillin is the usual drug of choice in the treatment and

prevention of streptococcal infections, including the prophy-

laxis of rheumatic fever. See prescribing information.

Additional information available to the profession on request from Eli Lilly and Company, Indiana 46285

Ell Lilly Industries, Inc Carolina, Puerto Rico 00630



ZOVIRAX® (acyclovir) CAPSULES

Help free your patients from recurrences.

Daily therapy

Coping with genital herpes is rarely easy. For some, the worst part is the pain and discomfort of frequent attacks — month after month, year after year. For others, the emotional burden presents a more difficult problem, leading to social isolation, anxiety, and diminished self-esteem.

Prevent or reduce recurrences

Although your patients have to live with herpes, they shouldn't have to suffer. Daily therapy with ZOVIRAX CAPSULES can help free them from the cycle of recurrent genital herpes. For many, one capsule three times a day can suppress recurrences completely while on therapy.

Generally well tolerated

Daily therapy with ZOVIR. CAPSULES is generally we tolerated. The most frequeradverse reactions reported during clinical trials were headache, diarrhea, nausea vomiting, vertigo, and arthralgia.

The physical and emotion difficulties posed by genital herpes are unique for each patient. The frequency and severity of recurrent episod as well as the emotional impact of the disease, shoul be considered when selectin daily therapy with ZOVIRA CAPSULES.

Please see brief summary of prescribing information on next po



revent recurrences nonth after month ZOVIRAX acyclovir) CAPSULES

NDICATIONS AND USAGE: Zovirax Capsules e indicated for the treatment of initial episodes nd the management of recurrent episodes of

enital herpes in certain patients.

The severity of disease is variable depending on the immune status of the patient, the fre-uency and duration of episodes, and the degree of taneous or systemic involvement. These factors rould determine patient management, which may nclude symptomatic support and counseling only, the institution of specific therapy. The physical, notional and psycho-social difficulties posed by erpes infections as well as the degree of debilitaon, particularly in immunocompromised patients, re unique for each patient, and the physician hould determine therapeutic alternatives based on is or her understanding of the individual patient's eeds. Thus Zovirax Capsules are not appropriate in eating all genital herpes infections. The following uidelines may be useful in weighing the benefit isk considerations in specific disease categories:

irst Episodes (primary and nonprimary infec-

is — commonly known as initial genital herpes! Double-blind, placebo-controlled studies have emonstrated that orally administered Zovirax ignificantly reduced the duration of acute infection detection of virus in lesions by tissue culture) and esion healing. The duration of pain and new lesion ormation was decreased in some patient groups. The promptness of initiation of therapy and or the atient's prior exposure to Herpes simplex virus nay influence the degree of benefit from therapy. Patients with mild disease may derive less benefit han those with more severe episodes. In patients vith extremely severe episodes, in which prostraion, central nervous system involvement, urmary etention or inability to take oral medication equire hospitalization and more aggressive mangement, therapy may be best initiated with intraenous Zovirax

Recurrent Episodes:

Double-blind, placebo-controlled studies in patients with frequent recurrences (6 or more patients with frequent recurrences (6 or more pisodes per year) have shown that Zovirax Capsules given for 4 to 6 months prevented or reduced the requency and or severity of recurrences in greater than 95% of patients. Clinical recurrences were revented in 40 to 75% of patients. Some patients xperienced increased severity of the first episode ollowing cessation of therapy; the severity of subsequent episodes and the effect on the natural nistory of the disease are still under study. The safety and efficacy of orally administered acyclovir in the suppression of frequent episodes of senital herpes have been established only for up to 5 months. Chronic suppressive therapy is most appropriate when, in the judgement of the physician, the benefits of such a regimen outweigh whom or potential adverse effects. In general, Evirax Capsules should not be used for the sup-

virax Capsules should not be used for the sup ression of recurrent disease in mildly affected atients. Unanswered questions concerning the human relevance of *in vitro* mutagenicity studies and reproductive toxicity studies in animals given very high doses of acyclovir for short periods (see Carcinogenesis, Mutagenesis, Impairment of Fertility) should be borne in mind when designing long-term management for individual patients. Discussion of these issues with patients will provide them the opportunity to weigh the potential for toxicity against the severity of their disease. Thus, this regimen should be considered only for appro-priate patients and only for six months until the results of ongoing studies allow a more precise evaluation of the benefit risk assessment of prolonged therapy.

Limited studies have shown that there are

certain patients for whom intermittent short-term treatment of recurrent episodes is effective. This approach may be more appropriate than a suppressive regimen in patients with infrequent

recurrences

Immunocompromised patients with recurrent herpes infections can be treated with either inter mittent or chronic suppressive therapy. Clinically significant resistance, although rare, is more likely to be seen with prolonged or repeated therapy in severely immunocompromised patients with active

CONTRAINDICATIONS: Zovirax Capsules are contraindicated for patients who develop hypersensitivity or intolerance to the components of the

WARNINGS: Zovirax Capsules are intended for oral ingestion only

PRECAUTIONS: General: Zovirax has caused decreased spermatogenesis at high doses in some animals and mutagenesis in some acute studies at high concentrations of drug (see PRECAUTIONS Carcinogenesis, Mutagenesis, Impairment of Fertility) The recommended dosage and length of treatment should not be exceeded (see DOSAGE AND ADMINISTRATION).

Exposure of Herpes simplex isolates to acyclovir in vitro can lead to the emergence of less sensitive viruses. The possibility of the appearance of less who sensitive viruses in man must be horne in mind when treating patients. The relationship between the *in vitro* sensitivity of Herpes simplex virus to acyclovir and clinical response to therapy has yet to

he established. Because of the possibility that less sensitive virus may be selected in patients who are receiving acyclovii, all patients should be advised to take particular care to avoid potential transmission of virus if active lesions are present while they are on therapy. In severely immunocompromised patients, the physician should be aware that prolonged or repeated courses of acyclovir may result in selection of resistant viruses which may not fully respond to continued acyclovir therapy.

Drug Interactions: Co-administration of probenecid with intravenous acyclovir has been shown to increase the mean half-life and the area under the concentration-time curve. Urinary excretion and renal clearance were correspondingly reduced.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Acyclovir was tested in lifetime bioassay in rats and mice at single daily doses of 50, 150 and 450 mg kg given by gavage. There was no statistically significant difference in the incidence of tumors between treated and control animals, nor did acyclovir shorten the latency of tumors. In 2 in vitro cell transformation assays, used to provide preliminary assessment of potential oncogenicity in advance of these more definitive life-time bioassays in rodents, conflicting results were obtained Acyclovir was positive at the highest dose used in one system and the resulting morphologically transformed cells formed tumors when inoculated into immunosuppressed, syngeneic, wearling mice Acyclovir was negative in another transformation system considered less sensitive

In acute studies, there was an increase, not statistically significant, in the incidence of chromosomal damage at maximum tolerated parenteral doses of 100 mg kg acyclovir in rats but not Chinese hamsters; higher doses of 500 and 1000 mg/kg were clastogenic in Chinese hamsters. In addition, no activity was found after 5 days dosing in a dominant lethal study in mice. In 6 of 11 microbial and mam-malian cell assays, no eyidence of mutagenicity was ohserved. At 3 loci in a Chinese hamster ovary cell line, the results were inconclusive. In 2 mammalian cell assays (human lymphocytes and L5178Y mouse lymphoma cells *in vitro*), positive responses for mutagenicity and chromosomal damage occurred but only at concentrations at least 400 times the acyclovir plasma levels achieved in man

Acyclovir plasma fevers activeved in final.

Acyclovir has not been shown to impair fertility or reproduction in mice (450 mg/kg/day, p.p.) or in rats (25 mg/kg/day, s.c.). At 50 mg/kg/day s.c. in the rat, there was a statistically significant increase in post-implantation loss, but no concomitant decrease in the statistical formula of the statistical formula or best tracted authority. post-implantation loss, but no concomitant decrease in litter size. In female rabbits treated subcutancously with acyclovir subsequent to mating, there was a statistically significant decrease in implantation efficiency but no concomitant decrease in litter size at a dose of 50 mg kg/day. No effect upon implantation efficiency was observed when the same dose was administered intravenously. In a rat peri- and postnatal study at 50 mg/kg/day s.c., there was a statistically significant decrease in the group mean numbers of corpora lutea, total implantation sites and live fetuses in the F₁ generation. Although not statistically significant, there was also a dose related decrease in group mean numbers of live fetuses and implantation sites at 12.5 mg/kg/day and 25 mg/kg/day, s.c. The intravenous administration of 100 mg/kg/day, a dose known to cause obstructive nephropathy in rabbits, caused a significant increase in fetal resorptions and a corresponding decrease in litter size. However, at a

maximum tolerated intravenous dose of 50 mg kg day in rabbits, there were no drug-related reproduc-

Intraperitoneal doses of 320 or 80 mg/kg day acyclovir given to rats for 1 and 6 months, respetively, caused testicular atrophy. Testicular atrophy was persistent through the 4-week postdose recovery phase after 320 mg/kg/day; some evidence of recovery of sperm production was evident 30 days post-dose. Intravenous doses of 100 and 200 mg kg day dose intraversus tosses of 100 and 200 mg kg day acyclovir given to dogs for 31 days caused asperma-togenesis. Testicles were normal in dogs given 50 mg/kg/day, i.v. for one month.

Pregnancy: Teratogenic Effects: Pregnanc Category C. Acyclovir was not teratogenic in the mouse (450 mg kg/day, p.o.), rat (50 mg kg day, s.c.) or rahhit (50 mg kg/day, s.c. and i.v.). There are no adequate and well-controlled studies in pregnant women. Acyclovii should not be used during pregnancy unless the potential benefit justifies the potential risk to the fetus. Although acyclovir was not teratogenic in animal studies, the drug's potential for causing chromosome breaks at high concentration should be taken into consideration in making this determination

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should he exercised when Zovirax is administered to a nursing woman. In nursing mothers, consideration should be given to not using acyclovir treatment or discontinuing breastfeeding

Pediatric Use: Safety and effectiveness in children have not been established

ADVERSE REACTIONS - Short-Term Administration: The most frequent adverse reactions reported during clinical trials were nausea and or vomiting in 8 of 298 patient treatments (2.7%) and headache in 2 of 298 (0.6%). Less frequent adverse reactions, each of which occurred in 1 of 298 patient treatments (0.3%), included diarrhea, dizzines anorexia, fatigue, edema, skin rash, leg pain, inguinal adenopathy, medication taste and sore

Long-Term Administration: The most frequent adverse reactions reported in studies of daily therapy for 3 to 6 months were headache in 33 of 251 patients (13.1%), diarrhea in 22 of 251 (8.8%). 231 patients (13.17), diarrhea in 22 of 231 (3.67), nausea and/or vomiting in 20 of 251 (8.07), vertigo in 9 of 251 (3.67), and arthralgia in 9 of 251 (3.67). Less frequent adverse reactions, each of which occurred in less than 3% of the 251 patients (see occurred in less than 5 of the 251 patients (see number of patients in parentheses), included skin rash (7), insomma (4), fatigue (7), fever (4), palpita-tions (1), sore throat (2), superficial thrombophlebi-tis (1), muscle cramps (2), pars plantis (1), menstrual abnormality (4), acne (3), lymphadenopathy (2), irritability (1), accelerated hair loss (1), and depression (1)

DOSAGE AND ADMINISTRATION: Treatment of initial genital herpes: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 10 days (total 50 capsules).

Chronic suppressive therapy for recurrent disease: One 200 mg capsule 3 times daily for up to 6 months. Some patients may require more drug, up to one 200 mg capsule 5 times daily for up to

Intermittent Therapy: One 200 mg capsule every 4 hours, while awake, for a total of 5 capsules daily for 5 days (total 25 capsules). Therapy should be initiated at the earliest sign or symptom (pro-

Patients With Acute or Chronic Renal Impairment: One 200 mg capsule every 12 hours is recommended for patients with creatinine clearance 10 ml/min/1.73/m²

HOW SUPPLIED: Zovirax Capsules (blue, opaque) containing 200 mg acyclovir and printed with "Wellcome ZOVIRAX 200" - Bottles of 100 DC-0081-0991-55) and unit dose pack of 100 (NDC-0081-0991-56).

Store at 15-30 C (59-86 F) and protect from light.

In controlled studies, recurrences were totally prevented for 4 to 6 months in up to 75% of patients.

Burroughs Wellcome Co., Research Triangle Park. North Carolina 27709



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HYDROPS FETALIS

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HYDROPS FETALIS is a unique clinical entity affecting the fetus. The causes of hydrops are varied and often poorly understood. As the etiology of this entity has changed during recent years from predominantly immunologic to nonimmunologic, a review of this type may be helpful.

The term hydrops fetalis refers to pathologically increased fluid accumulations in serous cavities and/or edema of the soft tissues in a fetus. Most authors use the term hydrops only if there is significant tissue edema.

The condition was first described in 1892 by Ballantyne when he reported 65 cases from the literature. He characterized the abnormality "by general anasarca, by the presence of fluid effusions in the peritoneal, pleural and pericardial sacs, and usually by edema of the placenta; and resulting in death of the fetus or infant before, during or immediately after birth." In 1932 Diamond, et al proposed the concept of icterus gravis neonatorum,

hydrops fetalis and congenital anemia of the newborn.² At this time hydrops and erythroblastosis (hemolysis secondary to maternal/fetal blood group incompatibility) were considered a single entity. It was not until 1943 that Potter published the first paper on "universal edema" that was *not* associated with erythroblastosis.¹ She reviewed autopsies of 67 hydropic infants including 17 who had *no* evidence of erythroblastosis.

Erythroblastosis

Erythroblastosis is a condition in which fetal red cells possessing an antigen lacking in the mother cross the placenta into the maternal circulation where they stimulate production of antibodies. The antibodies return to the fetal circulation, attach to the antigenic site on the surface of the red cells, and lead to eventual destruction of the cell. This hemolytic process takes place *in utero* and results in marked compensatory overproduction

of young red cells in the fetal erythropoietic sites. Because overproduction usually is not complete, varying degrees of anemia may develop in utero. Prior to the use of Rh immunoglobulin, ABO incompatibility accounted for approximately twothirds of cases of hemolytic disease and Rh incompatibility for one-third.² Approximately 2% involved minor blood factors-C, E, Kell, etc.

Hemolysis results in anemia and hyperbilirubinemia. Usually the anemia is mild with few symptoms. However, with severe anemia one may see marked pallor, tachycardia, generalized edema, ascites, pleural effusions, petechiae and hepatosplenomegaly - which together comprise the picture of hydrops. Laboratory studies may reveal decreased hemoglobin, increased reticulocyte count (>6%), increased nucleated RBC's (>10/100 WBC), polychromasia and anisocytosis, spherocytosis in ABO incompatibility, thrombocytopenia and possibly hypoglycemia. Occasionally, normal hemoglobin levels may occur in the presence of severe jaundice and hydrops. Presumably, this indicates effective marrow compensation.

Petechiae and purpura may occur because of associated thrombocytopenia and anoxic injury to the capillaries. In severely affected cases, intracranial and pulmonary hemorrhage are potential complications. Among such infants there is, in addition to thrombocytopenia, a complex disturbance of coagulation that often suggests disseminated intravascular coagulation. In a few infants there have been deficiencies in the vitamin Kdependent coagulation factors, suggesting impaired synthesis due to hepatic dysfunction.

Etiology of Hydrops with Erythroblastosis

The traditional explanation for the occurrence of hydrops with erythroblastosis was that severe anemia led to chronic congestive heart failure and hypervolemia which, in turn, resulted TABLE 1

	Hydrops Fetalis	
Possible Pathophysio- logic Mechanism	Specific Disturbance	Examples
Increased Capillary Hydrostatic Pressure	Primary Myocardial Failure	Myocarditis Arrhythmias (e.g., paroxysmal supraventricular tachycardia) Cardiac Tumors Structural Cardiac Defects
	High-Output Cardiac Failure	Severe Anemia Arteriovenous Malformations Parabiotic Syndrome Hemangiomata
	Obstruction of Venous Return	Cystic Adenomatoid Malformation of the Lung Hepatic Tumor Venous Thrombosis
	Obstruction of Lymph Flow	Right-sided Diaphrag- matic Hernia Turner's Syndrome
Decreased Plasma Oncotic Pressure	Decreased Albumin Formation Increased Albumin Excretion	Rh Incompatibility (?) Liver Failure Congenital Nephrotic Syndrome
Increased Capillary Permeability	Fetal Hypoxia	Placental Edema and Dysmaturity Umbilical Cord Torsion or Knot Umbilical Vein Thrombosis Congenital Infections

in edema, serous effusions and respiratory distress. While early studies in the 1940s suggested that venous pressure and blood volume were increased in the hydropic baby,3,4 later investigators indicated that blood volumes were normal or decreased.5.6 Therefore, hypervolemia does not seem to be the cause of the hydropic condition

If edema is not caused by hypervolemia and congestive heart failure, what is the etiology? As early as 1932

Diamond proposed three possible explanations for hydrops.6

- 1. Increased venous and capillary hydrostatic pressure from chronic congestive heart failure secondary to severe anemia.
- 2. Decreased plasma colloid osmotic pressure secondary to hypoproteinemia.
- 3. Increased capillary permeability from chronic tissue hypoxia secondary to anemia.

The previously mentioned studies

TABLE 2

Conditions Associated with Nonimmune Hydrops

Hematologic disorders

Homozygous alpha-thalassemia

G 6-PD deficiency

Closed space intrauterine hemorrhage (ICH)

Kasabach-Merritt syndrome

Cardiovascular disorders

Structural defects

Premature closure of fetal shunts (absence of foramen oyale or ductus arteriosus

Arrhythmias (SVT, atrial flutter, heart block, parasystole)

Myocardial dysfunction (endocardial fibroelastosis, myocardial infarction, myocarditis)

Obstruction of venous return

Cardiae tumors

Vascular tumors and malformations

Calcific pericarditis Pulmonary disorders

Congenital cystic adenomatoid malformation

Pulmonary sequestration Pulmonary hypoplasia Diaphragmatic hernia

Pulmonary lymphangiectasia

Congenital hydrothorax/chylothorax

Thoracogastroschisis Hamartoma of lung Mediastinal teratoma

Renal disorders

Malformations (polyeystic, etc.)

Urinary obstruction
Retroperitoneal fibrosis
Congenital nephrosis
Bladder perforation
Renal vein thrombosis

Gastrointestinal disorders

GI obstruction

TEF

Meconium peritonitis Hepatitis and cirrhosis

Biliary atresia Portal dysplasia Hepatic calcification

Chromosomal abnormalities

Turner's syndrome

Trisomy 18 Trisomy 21 Triploidy

Anomalies of 11 and short arm of 13

XX XY mosaicism

Congenital tumors

Neuroblastoma Wilm's tumor Teratoma

Myxoblastoma of neck Cystic hygroma

Congenital infection

Viral (CMV, coxsackie, parvovirus, hepatitis, rubella, herpes)

Bacterial (syphilis, leptospirosis)

Parasitic (toxoplasmosis, Chagas' disease)

Disorders of the placenta and cord

Chorioangioma
Umbilical cord torsion
True knot of the cord
Angioma of the cord
Umbilical artery aneurysm
Umbilical vein thrombosis

Placental dysmaturity Chorionic vein thrombosis

Amniotic bands Gestation disorders

Twin-twin transfusion (parabiotic syndrome)

Feto-maternal transfusion

Diabetes mellitus

Toxemia

Acardiac parasitic monster

Recognized malformation syndromes

Osteogenesis imperfecta Chondrodysplasia Holoprosencephaly Pena-Shokeir syndrome Saldino-Noonen syndrome Neu-Laxova syndrome Francois syndrome type 3 Multiple pterygium syndrome

Other

Sacral agenesis

Storage diseases (Hurler's, sialidosis, gangliosidosis

GMI, Gaucher's) Arthrogryposia Tracheal atresia Polysplenia syndrome

Trauma

Congenital lymphedema

Cloacal malformation

Ovarian cyst

Not associated with hydrops: congenital hypoalbumi-

nemia/analbuminemia, cystic fibrosis

have cast doubt on Diamond's first explanation. In reference to the second, other investigators measured total protein, albumin and colloid osmotic pressure on cord blood of 15 infants with erythroblastosis (six with hydrops). They found total protein and albumin to be normal, but found colloid osmotic pressure to be lower than normal. Thus, in these erythroblastotic infants, a given protein concentration appeared to exert a lower colloid osmotic pressure than in normal infants.

Plasma albumin has been regarded as the major contributor to plasma colloid osmotic pressure. The authors postulated that in erythroblastotic infants: 1) albumin may be polymerized into large and osmotically less effective aggregates, or 2) that a substantial part of albumin's osmotic activity results from its highly charged state at physiological pH which is neutralized by bilirubin binding, thereby making it osmotically inactive.⁷

Phibbs, et al measured umbilical cord blood albumin concentration in their group of erythroblastotic infants and found an inverse relation between albumin concentration and the severity of the hydrops.6 They also measured the rate of loss of labeled albumin from the circulation and found no difference between the groups studied. They concluded that hypoalbuminemia is probably a consequence of reduced hepatic synthesis.8 Further evidence implicating hypoalbuminemia as a factor in the etiology of hydrops was provided in 1985 by Nicolaides, et al, who sampled fetal blood by fetoscopy at 18-25 weeks gestation in 17 severely affected erythroblastotic fetuses (seven with hydrops).9 Total protein and albumin were significantly decreased in the hydropic infants, presumably the result of protein losses through endothelial defects, as well as possibly decreased synthesis. Nicolaides, et al subsequently sampled fetal blood from 18 fetuses with unexplained hydrops and found that total protein and albumin were lower than normal in all instances.10 The potential

		TABLE 3 Case Studies		
Author	Total Number	Idiopathic Etiology (%)	Mortality (%)	Incidence
Macafee, et al, 1970	33	39	82	1/3538
Beischer, et al,				
1970	44	36	95	
Etches and				
Lemons, 1979	22	32	50	
Maidman, et al,				
1980	5	0	80	1/2566
Hutchison, et al,				
1981	61	44	98	1/3748
Machin, 1981	28	21		
Davis, 1982	14	36	64	
Mostoufi-Zadeh,				
et al, 1984	40	42	100	
Holzgreve, et al,				
1984	50	16	82	
Nicolaides, et al,				
1985	30	57	90	
Evron, <i>et al</i> , 1985	11	64	82	1/2111
Holzgreve, et al,				
1985	103	15	82	
	441	$\bar{x} = 33.5\%$	$\bar{x} = 82.3\%$	

value of correcting the hypoalbuminemia by repeated fetoscopic intravascular infusions of albumin is being investigated.

In animal models the creation of anemia alone does not result in hydrops. However, Horger and Hutchinson in 1970 developed a model in sheep using a combination of hemolytic anemia and inhibition of protein synthesis. Other animal models for hydrops include tracheal ligation of the fetus and cardiac pacing to establish fetal supraventricular tachycardia.

In summary, the etiology of erythroblastotic hydrops remains uncertain, but is most likely multifactorial and secondary to anemia and hypoproteinemia (with decreased colloid osmotic pressure).

Nonimmune Hydrops

In addition to hydrops caused by blood group incompatibilities, the condition may occur in association with a variety of other non-immunologic abnormalities, in which case it is referred to as nonimmune hydrops. Due to the decrease in Rh-induced disease in recent years, nonimmune hydrops now accounts for as many as 75% of the cases of hydrops. 14.15

Table 1 lists some of the specific causes of nonimmune hydrops with possible pathophysiological mechanisms such as increased capillary hydrostatic pressure, decreased plasma oncotic pressure and increased capillary permeability.

Tables 2 and 3 list the reported causes of and associations with non-immune hydrops. 16-40 While the frequency of this condition depends upon the definition used, the incidence of hydrops is approximately one in 3,000 live births. An "idiopathic" etiology for nonimmune hydrops accounts for 0-64% of the cases depending to a large degree on the extent of the evaluation. Mortality varies from 64-100% in these

TABLE 4
Conditions Associated with Nonimmune Hydrops Fetalis in 421
Previously Reported Cases^{10,18,22,23,27,34,40}

Diagnosis	Number	Percent
Idiopathic	125	29.7
Chromsomal disorders	45	10.7
Twin gestation	44	10.4
Congenital heart disease	35	8.3
Recognizable malformation syndrome	25	5.9
Arrhythmias	16	3.8
Alpha-thalassemia	16	3.8
Congenital infections	13	3.1
Congenital cystic adenomatoid malformation	10	2.4
Urinary obstruction	9	2.1
Teratoma	8	1.9
Congenital hepatitis	8	1.9
Meconium peritonitis	7	1.7
Renal dysgenesis	7	1.7
Fetomaternal hemorrhage	6	1.4
Congenital diaphragmatic hernia	6	1.4
Pulmonary sequestration/hypoplasia	5	1.2
Chorioangioma of placenta	4	1.0
Cardiomyopathy/fibroelastosis	4	1.0
Cystic hygroma	4	1.0
Gastrointestinal obstruction	3	0.7
Cardiac tumors	3	0.7
Myxoblastoma of neck	2	0.5
Storage disease	2	0.5
Amniotic bands	2	0.5
Nonimmune hemolytic disease	2	0.5
Other	10	2.4
Encephalocele 2		
Gastroschisis 2		
Obstructed venous return 3		
Traeheal atresia 1		
Multiple anomalies 1		
Pulmonary lymphangiectasia 1		
Total number of cases	421	100

series with most reporting about 80%.

Table 4 shows the relative frequencies of conditions associated with nonimmune hydrops in 421 cases. Approximately one-third are idiopathic, while significant malformations (chromsomal disorders, syndromes and heart disease) account for about 25%. The other associations are generally rare. Familial recurrence has been reported but also is rare.²³

Frequent maternal complications

associated with nonimmune hydrops include: pre-eclampsia, severe anemia, hypoalbuminemia, polyhydramnios and uterine atony. A fetal ultrasound may be indicated in the presence of polyhydramnios, unexplained anemia or pre-eclampsia. With sonography about 80% of nonimmune hydrops at approximately 28 weeks gestation may be detected. A complete prenatal and postpartum evaluation of the mother and baby may lead to a precise

diagnosis in as many as 85% of cases of nonimmune hydrops. Table 5 delineates diagnostic tests which may be considered in a search for the etiology when the hydrops is detected in utero.

Treatment

The best treatment for Rh-induced disease is prevention using Rh immunoglobulin. The recommendations are that it be given to any Rhnegative female who is unavoidably exposed to Rh-positive red cells.2 It is indicated after the delivery of an Rhpositive infant and, if the father is Rhpositive, after abortion, amniocentesis. ruptured ectopic pregnancy, manual version and at about 28 weeks gestation.41,42 It also should be given if an Rh-negative female receives mismatched Rh-positive blood or an unavoidable transfusion of an Rhpositive blood component (platelets, granulocytes, plasma). In each of these situations the volume of Rh-positive blood transfused into the woman should be estimated and the appropriate dose of Rh immunoglobulin administered. Ten micrograms of Rh immunoglobulin will neutralize 1 ml of Rh-positive blood. It is recommended that it be given within 72 hours of exposure. The usual dose of 300 µg Rh immunoglobulin given after delivery is adequate to prevent sensitization by a fetomaternal transfusion as large as 30 ml. It is important to be aware that after the dose of Rhogam at 28 weeks gestation, 20% of women will have a positive antibody titer at 30 weeks, the result of passively acquired antibody not from Rh sensitization. Therefore, repeat titers at 36 weeks in a previously nonsensitized mother are not recommended.

Ninety percent of Rh disease is due to the D antigen, with the remainder being due to C and E.⁴³ About 10% of all pregnancies will be Rh incompatible. Fetomaternal transfusion occurs in about 50% of pregnancies with the majority of such transfusions being insignificant. However, an Rh-negative

woman has a 15% chance of developing Rh antibodies following pregnancy with an Rh-positive infant. If all susceptible women are given the usual dose of Rh immunoglobulin within 72 hours of delivery, the incidence of sensitization will be reduced at about 1%.² When combined with an antipartum dose at 28 weeks gestation, the incidence is <1%.

The current recommendations for the care of an Rh-negative pregnant woman include an antibody screen at initial examination and at about 28 weeks gestation. If antibodies are present the titer should be checked every four weeks until 24 weeks gestation, then every two weeks. If the antibody titer is $\geq 1:8$, amniocentesis is usually indicated to determine the concentration of bilirubin (or absorbance at 450 nm). This will reflect the degree of hemolysis and can be plotted on the Liley curves for predictability of severity of disease. As many as 80% of severely affected fetuses may die before 32 weeks without treatment. Therefore, high values of $\Delta 450$ are indications for treatment by intrauterine transfusion or delivery while lower values are indications for expectant management with repeated amniocenteses. Two recent developments, however, have changed the basic course of management which has been used for 25 years. The first is the extensive use of ultrasound to evaluate the development of hydrops and fetal activity44 and the second is the use of intrauterine exchange transfusion via percutaneous umbilical vein puncture.45

Treatment of nonimmune hydrops depends on the specific etiology. Some cases may resolve spontaneously if the cause of the hydrops is eliminated. For example, Rumzin and Napflin reported a case of fetal hydrops with massive ascites which was first noted at 26 weeks gestation in association with fetal tachycardia. Three days later the tachycardia resolved with subsequent resolution of the ascites by 32 weeks. Successful treatment of fetal supraventricular tachycardia may be ac-

TABLE 5

Diagnostic Evaluation of Nonimmune Hydrops

Prenatal Maternal blood type and antibody studies

Maternal CBC and indices (consider father also to detect heterogygous alpha-thalassemia)

Kleihauer-Betke stain

Maternal G-6-PD and pyruvate kinase carrier

status

Maternal VDRL

Maternal TORCH titers

Detailed ultrasound (note placental thickness; increased umbilical vein diameter is a sign of

severe disease)

Maternal oral GTT

Maternal abdominal x-rays (to detect chondro-

dystrophies) Amniocentesis

Fetal ECHO

Fetal karyotype

Amniotic fluid culture, especially for CMV

Alpha-fetoprotein

Specific metabolic tests for Gaucher's, etc.

Restriction endonuclease test for alpha-thala-

ssemia

Fetoscopy

Rapid karyotype and metabolic tests

Hemoglobin chain analysis

Fetal plasma analysis for specific IgM tests

Fetal visualization for malformations

Fetal plasma albumin

Neonate CBC and platelets

Blood type and Coombs

Hemoglobin and electrophoresis

Red cell G-6-PD, pyruvate kinase, etc.

Serology for CMV, toxoplasmosis, syphilis

EKG, ECHO

Bacterial and viral cultures

Karyotype

Diagnostic paracentesis, thoracentesis

Renal function and liver function tests

Placenta Culture for virus

Tissue culture for chromosomes, inborn errors of

metabolism

Look especially for fetofetal anastomotic vessels,

chorioangioma, metastatic congenital neoplasm,

evidence of infection

Autopsy Gross and microscopic morphology

Organ culture for infection

Tissue culture for chromosomes, inborn error of

metabolism

If repetitive idiopathic hydrops, consider HLA typing of parents

complished by maternal administration of digoxin, propranolol, procainamide, quinidine and verapamil. Fetal treatment for other disorders related to hydrops is still experimental and under study,47,48

Summary

Hydrops fetalis may be secondary to Rh or other blood group incompatibility (and erythroblastosis) or to a variety of nonimmune disorders. Due to the development of Rh immunoglobulin and good preventive medicine. the incidence erythroblastosis is decreasing, causing nonimmune hydrops to account for as many as 75% of the cases of hydrops. With sophisticated techniques and diligent evaluation, an etiology for the hydropic condition is being identified in increasing numbers of cases; however, as many as 64% of cases are still considered idiopathie. Whatever the cause of the hydropic condition, mortality for the fetus and infant remains very high. Optimal medical care requires the early identification of the hydropic condition in the fetus, careful management and treatment of the mother during the pregnancy and a planned delivery where the infant can receive immediate vigorous resuscitation and stabilization.

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Cardiovascular Clues in the Diagnosis of Poisoning



ADULT CRITICAL CARE MEDICINE

Methodist Hospital OF INDIANALING MARK KIRK, M.D. WILLIAM CORDELL, M.D. Indianapolis

ECAUSE MOST overdosed patients present to the emergency department with a history that is unreliable or unobtainable, therapy is often initiated without a definite diagnosis. Likewise, the toxicologic screen is usually not immediately available and, therefore, cannot be relied upon to assist in initiating treatment of a critically ill poisoned patient. Instead, examination of the cardiovascular system with particular attention to the blood pressure, QRS duration, heart rate, and cardiac rhythm may direct the physician toward a more specific diagnosis.

General Principles of Hypotension in Poisoning

Hypotension in the poisoned patient may result from multiple physiologic alterations. Direct myocardial depression by the toxin may decrease cardiac output resulting in hypotension. Dysfunction of the autonomic nervous system either directly at receptors (e.g., adrennergic blockade) or at the autonomic centers in the central nervous system may result in loss of vascular tone producing vasodilation, relative hypovolemia, and a decrease in blood pressure. The poisons may also block compensatory mechanisms that normally offset hypotension. Finally, cardiovascular dysfunction or collapse may be the result of the secondary effects of poisoning such as hypoxia and acidosis.

REMEMBER:

- A massive overdose of virtually any drug can produce profound hypotension and agonal cardiac rhythms.
- Many overdoses involve multiple drugs. The effects of one drug may influence the action of another, creating a confusing, non-classical poisoning syndrome and clinical picture.
- Underlying cardiac disease may influence the effects of poisons in unpredictable ways.
- Cardiovascular system dysfunction may be secondary to hypoxia, acidosis and hypotension rather than a direct action of the poison.
- One useful diagnostic technique in the poisoned hypotensive patient is to divide likely groups of ingested drugs based on the QT interval from the patient's ECG. While not inclusive for all drugs, this method allows a general categorization of most substances likely to be ingested. An algorithm based on this method is shown in Figure 1. Rapid calculation of the heart ratecorrected QT interval (QTc) is shown in the Table.

The Hypotensive Poisoned Patient with QRS/QT Prolongation

Drugs with Quinidine-like effect

Drugs which exhibit the "quinidine-like" effect are direct myocardial membrane depressants, resulting in slowed intracardiac conduction which may be exhibited on the ECG as a prolonged QT interval and QRS widening. These drugs are negative ionotropes and also suppress the cardiac pace-maker, resulting in bradyarrhythmias. Bradyarrhythmias may not be seen if the drugs also have anticholinergic effects to counteract the slowed heart rate.

From the Emergency Medicine and Trauma Center, Methodist Hospital of Indiana.

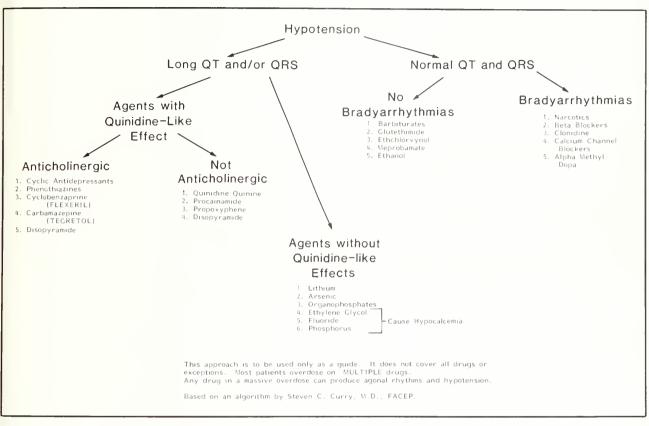


FIGURE: Algorithm for hypotensive poisoned patients.

Anticholinergic Signs Present

The signs of anticholinergic poisoning are tachycardia, dry axilla ("dry as a bone"), dilated pupils ("blind as a bat"), red flushed skin ("red as a beet"), hallucinations ("mad as a hatter"), hyperpyrexia, and decreased breath sounds. If signs of anticholinergic poisoning are present, cyclic antidepressants or phenothiazines are the most likely toxins.

Anticholinergic Signs Absent

The differential of this subgroup includes quinidine and drugs with quinidine-like effects: procainamide, propoxyphene, and disopyramide. Other drugs without quinidine-like effects may also produce hypotension and QRS/QT prolongation. These include lithium, arsenic and organophosphates. Ethylene glycol, fluoride and phosphates widen the QRS and prolong

the QT interval secondary to hypocalcemia.

The Hypotensive Poisoned Patient with Normal QS/QT Segments Bradycardia Present

A presentation of bradycardia and hypotension is seen with commonly abused drugs such as opioids and sedative-hypnotics. Other drugs to be considered include beta-blockers, clonidine, calcium channel blockers and alpha methyldopa, and digitalis.

Physiologic consequences of opioids and sedative hypnotics include direct myocardial depression, vascular smooth muscle relaxation resulting in vasodilation and paralysis of neuro-vascular regulation. Furthermore, the usual physiologic compensatory mechanisms in hypotension may also be blocked. This group of drugs also depresses respiratory drive allowing

TABLE Calculation of the Corrected QT Interval (QTc)

Since the QT interval duration varies with heart rate, a "corrected" value should be calculated for comparison against normal values.

Rule of Thumb: If the QT measured from the ECG is greater than ½ the R-R interval, the QT is probably prolonged.

Precise Method: QTC = measured QT ÷ square root of the R-R interval

Normal QT Interval: Male - .42 seconds Female - .43 seconds hypoxia to further alter an already dysfunctional eardiovascular system.

Bradycardia Absent

Many drugs will produce hypotension without prolonging the QRS/QT durations or causing bradycardia. These include the barbiturates, narcotics, gluthethimide, ethchloryynol.

Summary

Treatment of the poisoned patient

is often initiated without adequate historical or toxicologic information. Awareness of disturbances of the cardiovascular system may provide important clues for determining a specific diagnosis.

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Pseudomembranous Colitis: Case Report and Review of the Literature

STEPHEN W. BAKER, M.D. JAMES M. VANDIVIER, M.D. Indianapolis

IARRHEA IS COMMONLY associated with the use of oral or systemic antibiotics, and the term antibiotic associated colitis has been applied to this syndrome. This syndrome is most frequently due to a change in intestinal microbial flora. However, diarrhea which does not resolve with simple cessation of the inducing antibiotic should make one suspicious of an overgrowth of C. difficile with production of toxigenic pseudomembranous colitis (PMC). We present an interesting case of moderately severe PMC, in which a self-limited diarrhea appeared within two days of starting oral antibiotics only to reappear eight weeks later with marked leukocytosis and apparent resistance to metronidazole. A discussion of PMC and its treatment based on the literature follows.

Case Report

A 63-year-old white woman presented with mastititis of the left breast, and was begun on Keflex 250 mg P.O. QID. On the second day of medication the patient stopped taking antibiotics because of nausea and diarrhea, and both the mastitis and the

From St. Vincent Hospital and Health Care Center, 2001 W. 86th St., Indianapolis, Ind. 46260.

Publication supported in part by the Indiana Medical Foundation. Special thanks to Jean Merrell for her help in preparation. diarrhea resolved. Eight weeks later she developed abdominal cramping, 12-15 watery stools per day, weakness, and orthostasis necessitating hospitalization. She had a past history of indigestion, abdominal cramps and occasional diarrhea. There was no history of fever, recent travel or questionable food intake.

Medications on admission were only Desyrel 150 mg P.O. QHS. Past medical history included a hysterectomy 12 yrs previously, "borderline" diabetes, mild CVA, cervical arthritis, sciatica, and depression. Physical exam on admission revealed a woman in mild distress with a BP 120/62 lying, 70/50 standing, P 114, T 97°. Her abdomen was soft, but she was tender in the LLQ with rebound. Stool guiac was positive. Abdominal x-ray revealed a nonspecific bowel gas pattern. Initial blood work revealed: HG 15.9, HCT 46.7, WBC 48,700; Segs 25, Bands 67, Lymphs 3, Monos 3; Albumin 2.3 (3.7-5.0). Her stool contained many polymorphonuclear leukocytes, and C. difficile toxin was detected (no titers available). The stool was negative for ova and parasites, Staph aureus, Salmonella, Shigella, and Campylobacter.

Hospital Course: The patient was hydrated and because of a presumptive diagnosis of diverticulitis and possible abscess, antibiotic therapy was begun with cefoxitin. On the third hospital day her WBC had decreased to 18,100 and flexible sigmoidoscopy was performed, demonstrating many pseudomembranes with surrounding inflammation. She was then changed to metronidazole. After five days of metronidazole, she continued to have low grade fever, abdominal cramps, frequent liquid stools, and was unable

to tolerate solid foods. Her WBC had continued to decrease to 11,400 (30 segs, 49 bands, 12 lymphs) and neither C. difficile toxin nor enteric pathogens were detected from a stool sample. Vancomycin was started. Within 24 hours she reported dramatic improvement including decreased abdominal cramping and number of stools. Repeat sigmoidoscopy on the second day of vancomycin revealed disappearance of inflammation and markedly decreased number of pseudomembranes. On the fourth day of vancomycin she was having one or two formed stools per day, and was discharged.

Antibiotic Associated Colitis

With the rise of the antibiotic era, the incidence of antibiotic-associated colitis has increased dramatically. This may simply be the result of a change of flora, but it may also be either an overgrowth of, or increase in toxin production from Staph aureus, E. Coli, Salmonella, Clostridium perfringens, or Clostridium difficile. Oral neomycin has caused diarrhea by means of malabsorption. An overgrowth of C. difficile is probably the most common etiology.

C. difficile causes diarrhea and superficial intestinal wall damage by means of at least two toxins: enterotoxin (A) and a cytopathic toxin (B), respectively. The resultant pseudomembrane formation consists of fibrin, platelets, polymorphonuclearcytes and epithelial debris. These membranes overlay the epithlial surface and superficial lamina propria only and are easily removed, hence the term PMC.

Any antibiotic may cause PMC. Most frequently reported are clindamycin, ampicillin and the cephalosporins. Recently, both metronidazole^{7,15,16} and

vancomycin¹ have been implicated as causative agents. Oral antibiotics may be more likely to cause PMC than parenteral ones. Patients with advanced age may be at increased risk. Some cases have occurred after chemotherapy. Underlying debilitation may make one more susceptible.*

Clinical Course

Typically the patient experiences diarrhea and cramping abdominal pain four to nine days after beginning antibiotics. In up to one-third of patients, diarrhea may occur as long as four to six weeks after antibiotics. Symptoms may appear at any time in the antibiotic course, however. Cases have been reported after as little as a single dose of antibiotics for surgical prophylaxis. In our case, eight weeks had elapsed.

Diarrhea may be present without systemic signs and symptoms. Most frequently there is low grade fever. Although our patient had a WBC of 48,700, the usual mild leukocytosis is less than 20,000. Leukocytes are seen in the stool of only 50% of patients and the stool is only occasionally guiac positive. Hypoalbuminemia may be present secondary to protein loss in the stool. Toxic megacolon, colonic perforation or peritonitis may be present with little diarrhea and may cause death.

Diagnosis

Definite diagnosis is by isolation of *C. difficile* toxin from the stool and visualization of pseudomembranes. *C. difficile* growth requires a special medium. Presence of *C. difficile* in the stool sample does not in itself prove PMC. *C. difficile* has been detected in the stools of 3% of asymptomatic per-

sons.^{1,2} Of the two major toxins: (A) enterotoxin and (B) cytopathic toxin, only the cytopathic toxin is detectable by assay. These tests take considerable time to obtain and false-positive and false-negative tests occur. Therefore, the clinical diagnosis of PMC is most rapidly established by endoscopic visualization of pseudomembranes and later confirmed by toxin assay.

Pseudomembranes are seen by endoscopy as 2-10 mm raised yellowish plaques, which are easily removable. There may be erythema and inflammation of surrounding mucosa. Pseudomembranes are most commonly seen in the distal colon, sigmoid or rectum on flexible sigmoidoscopy. However, lesions may sometimes be detectable only in the right colon. Rarely no lesions are seen except by biopsy on microscopic examination with confirmation by detection of toxin.

Treatment

Most commonly PMC may need no treatment aside from cessation of the inducing antibiotic, and supportive treatment with fluids and electrolytes. It is advisable to avoid antiperistaltic drugs. Also, institution of enteral precautions to prevent transmissions of the disease for the duration of diarrhea is recommended by the Center for Disease Control. The patient should improve in 48 hours and diarrhea should subside in 7-10 days.

Clinically, it seems logical to eradicate the organism responsible for the pathogenic toxin with antibiotics once the diagnosis is known.* Patients who definitely should be treated with antibiotics include those who are systemically ill with high fever, leukocytosis, abdominal pains or with peritoneal signs. Those who must remain on the inducing antibiotic for other infectious problems should also be treated. Without treatment there is 10-20% mortality in elderly or

debilitated patients.

Oral vancomycin is the drug of choice for severe PMC. There is much clinical experience to back it up. All strains are sensitive. It is poorly absorbed orally, and it reaches high concentrations in the colon with little systemic toxicity. There is a prompt symptomatic response in most patients within two to four days. All patients survive. Its main drawback has been its high expense (average wholesale cost \$432 for 250 mg QID x 10-day course).17 Also the oral suspension has a bitter taste, and is not well tolerated by patients who are nauseated. It occasionally has to be administered by a nasogastric tube. Oral capsules have been introduced recently at a slightly lower cost, but neither form is readily available outside the hospital. Recently, resistance to vancomycin has been reported in a case that responded rapidly to metronidazole.10 A case has been recently documented in our hospital which occurred while on IV vancomycin and resulted in the patient's death secondary to toxic megacolon.

Oral metronidazole has been evaluated as being as effective as vancomycin for treatment of PMC.4.8.9 It is more palatable and much less expensive (\$8.80 average wholesale price for generic metronidazole 250 mg P.O. QID x 10 days).17 Intravenous administration appears effective. Disadvantages are that it has very good absorption in the small intestine with variable levels reported in the lumen of the colon where needed. It also has been implicated as an inducer of PMC in one case.15 Carcinogenesis in mice is apparently not duplicated in humans, but it is not recommended for pregnant women or children.12 It also is known to cause a disulfuram-like reaction. However, it remains an acceptable first-line choice for all cases but the most severe PMC, and is currently being used more frequently because of ease and cost.

Oral Bacitracin is currently being evaluated and has been deemed as ef-

^{*}PMC was known before the introduction of antibiotics. It was described as a complication of surgery in 1893.18 It was later associated with a number of conditions such as spinal fracture, intestinal obstruction, cancer, hemolytic uremic syndrome, inflammatory bowel disease, Hirschsprung disease, shigellosis, or intestinal ischemia. It has occasionally been reported in otherwise healthy persons with no risk factors.

^{*}Cholestramine or Cholestipol, which bind the toxin in vivo, may be used in mild cases. These agents, however, also bind vancomycin and cannot be used concurrently.

fective as vancomycin. It, too, is expensive and bitter tasting.

High rates of relapse (up to 55%) have been noted in the past after vancomycin. The largest published report had a 24% rate of relapse; of those patients 46% had a second relapse.3 Metronidazole and Bacitracin have rates of relapse similar to vancomycin. Thus, relapse and recurrent relapse is a problem of equal proportion in all treatment regimens.' Relapse is probably due to C difficule spore formation, which would render any drug ineffective. Other possible causes include failure to eradicate the organism, reexposure to an environmental source, or even by induction of a new strain of C difficile during antibiotic treatment. Treatment of relapse is variableusually repetition of vancomycin.

Summary

Our case of PMC was atypical in the rapid onset of initial transitory symptoms, and appearance of moderately severe symptoms eight weeks after stopping antibiotics. Marked leukocytosis was present (48,700). After five days of oral metronidazole our patient remained markedly symptomatic with low grade fever, cramp ing and diarrhea, despite inability to detect toxin at that time. (A similar clearance of toxin while the organism persists has been described in patients treated with metronidazole.)14 Symptoms then rapidly improved while on vancomycin.

PMC is, and will continue to be, an important source of morbidity and mortality following use of all commonly prescribed antibiotics. PMC can occur at any time during treatment or two months later with a wide range of symptoms. A high index of suspicion is recommended for any diarrhea that doesn't resolve completely after simple cessation of antibiotics. Because of the high cost (\$432 vs. \$8.80), limited availability, bitter taste, and history of relapse associated with vancomycin, metronidazole is being used more frequently. It is more available, much less expensive, better tasting and may lead to better patient compliance. Relapse remains a problem with all treatments. Vancomycin, however, is still the drug of choice in severe PMC.

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RADIOLOGY CLINIC

Arm Pain and Weakness

SECTION EDITOR: Robert D. Tarver, M.D. Director of Chest Imaging Wishard Memorial Hospital Indianapolis, Ind.

ATIENT IS A 49-year-old white man who reports he started having problems 10 months ago with numbness in the 4th and 5th digits of his right hand. He was initially treated with nonsteroidal anti-inflamatories with resolution of his numbness. Eight months ago the numbness returned and was again treated with anti-inflammatory medication with a good result. Six months ago the numbness again reoccurred and was now associated with a pain over the anterior shoulder. Over the next months the patient noted a decreased amount of strength in his right distal arm associated with an increasing amount of numbness radiating from the 4th and 5th digits, up the arm, to the neck. In the past two months the patient also noted a decrease in the size of his right pupil which according to his personal physician could be a normal variant.

Patient's past medical history is significant for a 27-pack-year smoking history, although he did stop smoking 7 years ago. He had a normal chest radiograph one year ago. The patient had lost 30 pounds over the last year and complained of night sweats for the last 12 months.

Physical exam indicated a right Horner's Syndrome, no lymphadenopathy, a supple neck, moderate tenderness with shoulder palpation over the proximal deltoid, and moderate tenderness with palpation of the ulnar nerve in the elbow. Furthermore, the patient had decreased sensation primarily in the C7-T1 dermatones along with weakness of the associated muscles and decreased reflexes. The patient had a positive Adson's maneuver (loss of right radial pulse with hyperextension of his shoulders).

GUEST AUTHORS: Kelly J. Cassedy, M.D. Radiology Resident Indiana University Medical Center

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Patient's Radiograph on Admission: What Is the Patient's Problem?



(Diagnosis and Discussion on Next Page)

RADIOLOGY CLINIC

CONTINUED FROM PRECEDING PAGE

HE RADIOGRAPH shows a right apical lung mass with destruction of the posterior portions of the first three ribs and portions of the vertebral bodies C7, T1 and T2. A fine needle biopsy under fluoroscopic guidance diagnosed the mass as squamous cell carcinoma of the lung.

A Pancoast tumor is an apical lung tumor associated with local pain, ulnar neuropathy, Horner's syndrome and vertebral invasion. Dr. H.K. Pancoast, a Philadelphia radiologist, first described the superior pulmonary sulcus tumor in 1932; however, the tumor was first reported in 1838. Similar involvement of the thoracic inlet by a variety of benign and malignant lung tumors as well as inflammatory and infectious processes can produce similar clinical symptoms; however, bronchogenic carcinoma is the most common cause of this syndrome and only then is it called a "Pancoast Tumor.'

Pancoast tumors are rare and comprise less than 5% of all bronchogenic carcinomas. The tumor usually presents in the fifth to sixth decade with intense shoulder or scapular pain. The pain often radiates down the arm and may be associated with ulnar neuropathy. The pain is usually refractory to medication and may be misdiagnosed as arthritis. The duration of symptoms prior to diagnosis averages nearly six months. Almost all patients have a prior history of heavy smoking. Pulmonary symptoms such as cough, dyspnea and hemoptysis are rarely the presenting complaint. In addition, signs of mediastinal involvement, such as superior vena cava syndrome, phrenic or recurrent laryngeal nerve paralysis, are also rare. In most series squamous cell carcinoma predominates, followed by either adenocarcinoma or undifferentiated carcinoma.

As the tumor progresses cephalada more of the brachial plexus is involved, along with the sympathetic chain producing weakness and atrophy of the hand and Horner's syndrome, which is seen in approximately a third of the patients. The development of muscle weakness or atrophy is usually indicative of advanced disease.

The diagnosis of an early Pancoast tumor may be difficult radiographically. It commonly starts a thickening of the apical pleural and may be mistaken for an apical cap, a normal variant seen in 1% of the population. As the lesion progresses, the apical mass becomes more prominent. There may be adjacent rib destruction with involvement of the transverse processes and vertebral bodies of the upper thoracic and lower cervical spine. A CT scan will aid in showing the degree of spread of the tumor and involvement of adjacent structures. Bronchoscopy and sputum cytology are rarely helpful due to the peripheral location of these lesions. Fine needle aspiration allows tissue diagnosis in nearly all cases and may help identify inflammatory processes mimicking Pancoast Syndrome.

The treatment of Pancoast tumors remains controversial though it appears that pre-operative radiation followed by extended resection achieves the highest five-year survival. Most surgical series report approximately 33% five-year survival in those patients treated in this manner. These studies generally note a dismal five-year survival in those patients treated by radiation alone.

Contraindications to surgery include extensive invasion into the brachial plexus and supraclavicular fossa. Encasement of the great vessels—particularly the subclavian artery, vertebral body destruction, mediastinal nodal involvement and distant metastasis—are also contraindications. Local rib destruction does not preclude surgery. Those patients who are not surgical candidates usually receive palliative irradiation with the majority obtaining at least temporary relief of symptoms.

The most common cause of treatment failure is local recurrence. Vertebral body involvement and nodal involvement are the two worst prognostic factors followed by positive margins at resection. Favorable prognostic factors include extended pain relief following surgery.

Our patient received radiotherapy alone and has had dramatic relief of his pain.

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Percutaneous Drainage of Intra-abdominal and Retroperitoneal Abscesses

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In LESS THAN A decade percutaneous drainage (PD) of intra-abdominal and retroperitoneal abscesses has gained wide acceptance as a therapeutic option.¹¹⁴ The efficacy of PD is comparable to open surgical drainage (SD) without the additional risks of general anesthesia and laparotomy.^{15 17} This is especially true in the severely compromised patient in whom PD has effectively reversed potentially fatal outcomes.^{3,4,9}

In the past PD had been limited to unilocular, isolated collections. Frequently, the technique was used exclusively for those gravely ill patients described above. However, as familiarity with the technique of PD increased, so has the complexity of cases to which it is applied.³⁻¹⁴ It is in light of this expanded application that we reviewed our recent experience with PD at the Indiana University Medical Center.

Patients and Methods

In the two years between January 1, 1985 and December 31, 1986, 64

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Abstract

Sixty-four abscesses in the abdomen and retroperitoneum in 55 patients were drained percutaneously under radiologic guidance with an overall success rate of 83%. Complication and mortality rates were 8 and 2%, respectively. Twenty-two of the abscesses

(35%) had associated fistulas to the gastrointestinal or genitourinary tracts. Ten of these (45%) were cured without surgery. Percutaneous drainage should be the initial procedure of choice for abscess drainage in the abdomen and retroperitoneum.

abscesses in 55 consecutive patients were drained percutaneously under radiologic guidance at the Indiana University Medical Center. There were 24 female and 31 male patients. Ages ranged from 2 to 83 years, with a mean age of 47 years.

Nonpurulent, noninfected fluid collections such as seromas, hematomas, urinomas, bilomas, lymphoceles, cysts, and pseudocysts were excluded from this report. Twenty-one abscesses (33%) occurred in patients without prior surgery, and 43 (67%) occurred as complications of surgery. Eight abscesses (13%) persisted after unsuccessful surgical drainage. The abscess locations were: subphrenic (14), intrahepatic (9), pelvic (6), other intraperitoneal (17), pancreatic (6), perinephric (5), and other retroperitoneal (7).

Guidance for PD included computed tomography (CT) in 18 abscesses, ultrasonography (US) in four, fluoroscopy (FL) in seven, combined CT and FL in 16, and combined US and FL in 19. Sixty abscesses were drained by de novo needle punctures while four were approached via pre-existing cutaneous fistulas. Catheters were subsequently placed in 62 abscesses. One was treated by aspiration with an 18-gauge needle alone, and in another,

percutaneous access failed. Fifty-two of the 62 abscesses were unilocular and treated with one catheter. The remainder were multilocular, nine treated with two catheters, and one with four catheters. Catheter sizes ranged from 8 to 18 French, with a mean size of 11 French.

Technique

Antibiotic prophylaxis was employed, and analgesia was provided by local anesthesia and intravenous narcotics. Under appropriate radiologic guidance, an 18-gauge, thin-walled needle was placed into the collection and fluid aspirated, and sent for culture and appropriate chemical analyses. A guidewire was passed into the collection, the tract enlarged with fascial dilators, and the drainage catheter placed. The abscess cavity was evacuated and irrigated frequently with small amounts of saline until the aspirate was clear. Multilocular collections were drained with multiple catheters. The catheters were placed on low suction and irrigated with saline (5-25 ml) every six

A sinogram was obtained on the third postdrainage day to assess the size and location of the abscess and the relative position of the catheters. If present, associated fistulas to the GI

or GU tracts were usually demonstrated by this study. When necessary, the catheters were repositioned or additional catheters added. If fever persisted a repeat CT scan was performed to look for undrained fluid collections. The patient was discharged from the hospital when the body temperature and peripheral blood leukocyte count normalized. The catheters were maintained by the patient or a visiting nurse. At home the catheters were left to gravity drainage. and irrigation was decreased to 5 ml once daily. Sinograms were obtained weekly or biweekly. Collections were declared resolved when injection failed to reveal a residual cavity and contrast refluxed onto the skin. The catheters were then removed.

Results

In our series the overall success rate for abscess drainage by PD was 83% (53/64). The abscesses were cured in 43/64 cases (67%) without need for surgical intervention (Table 1). An additional eight patients (13%) were cured of their abscesses but required surgery for fistulas or other conditions (i.e., bowel obstruction). Four patients improved but required surgery for continued signs of infection, and two of these four had no residual abscess at exploration. Four others improved but had recurrence of the abscesses due to premature removal of the catheters; three of these were cured by a second PD. Five patients (8%) did not improve. Our results were confirmed by operative findings (16 cases), post mortem examinations (two cases), or clinical follow-up (46 cases). Clinical follow-up ranged from one to 104 weeks with a mean of 23 weeks. The rate of success or failure of PD was independent of the site of abscess. Eight of the 10 multilocular abscesses were successfully treated by PD.

Fistulas to the GI or GU tracts were demonstrated in 22 of 63 abscesses (35%). Fistulas to the small bowel were present in seven cases, colon in five, biliary tract in two, pancreas in five,

TABLE 1 Percutaneous Drainage: Indiana University Results

Outcome	Number (%)
Cure of abscess without surgery.	43/64 (67%)
Abscess cured but surgery done	
for fistula or other condition	8/64 (13%)
Patient improved but surgery done	
for continued signs of infection (2/4	
had no residual abscess at surgery).	4/64 (6%)
Patient improved but abscess recurred	4/64 (6%)
Patient not improved	5/64 (8%)
Complications	5/64 (8%)
Mortality from sepsis or	
associated complications	1/55 (2%)
30-day mortality	9/55 (16%)

and urinary tract in three. One patient died before the presence or absence of fistula could be determined.

Those abscesses without associated fistulas were drained for a mean of 15 days, while those with fistulas were drained for a mean of 44 days. Ten of the 22 abscesses with fistulas (45%) were cured by PD alone with complete resolution of the fistulas. Of the 10 who were cured, the mean drainage time was 73 days.

Organisms grew in culture in 56 of 64 abscesses. The number of organisms per abscess ranged from one to nine, with a mean of two. Thirty-seven grew aerobic bacteria only. Anaerobes grew in 15 and Candida in five. All of the seven patients with sterile abscesses had been on antibiotics. Those patients with fistulas to the GI or GU tracts were more likely to grow multiple organisms (avg 3.2) than those without fistulas (avg 1.3).

Procedure-related complications occurred in five of 64 abscess drainages (8%). These included one case of sepsis which responded to antibiotics and fluids. Catheter perforation of the small bowel and colon each occurred once. Both were subsequently explored, and in both the perforations had sealed spontaneously without sequelae. Sterile pleural effusions occurred in two patients. Nine of the 55 pa-

tients (16%) died within 30 days of PD. Eight of the nine had been cured of their abscesses, and they died of other conditions (all had poor physiologic scores). One was moribund at the time of PD. The abdomen was not explored in spite of a continued downhill course because of widely disseminated carcinoma and multiple organ failure. The patient expired three days after PD, and a postmortem examination was not performed.

Discussion

The success rate for PD of abdominal and pelvic abscesses in most series is greater than 75% with complication and mortality rates of less than 10% (Table 2).18 Non-controlled studies found similar success rates, complication rates, and mortality for PD and SD.15-17 Our overall success rate for abscess cure was 83%. Sixty-seven percent were cured without surgery, while 16% needed surgery for other reasons. Our success rate for multilocular abscesses (80%, 8/10) was not statistically different from the success rate for unilocular collections (83%, 45/54). This agrees with other reports of successful PD of multilocular abscesses.5,6,9,10

Fistulas to the gastrointestinal and genitourinary tracts were found in 35% of abscesses drained per-

TABLE 2
Percutaneous Drainage of Abdominal and Pelvic Abscesses

Series	# Abscesses	Success Rate	Complic Rate	Mortality
[1]	71	86%	15%	4%
[2]	50	82%	2%	0 %
[3]	207	86%	10%	0.4%
[4]	50	88%	4%	6%
[5]	23	76%	2%	0 %
[6]	136	77%	5 %	2%
[7]	45	82%	4%	0%
[8]	62	69%	5º/o	0.0/0

Note-success means cure without surgery

-series are identified by reference numbers

cutaneously. This is comparable to other reports of associated fistulas in 6 to 44% of abscesses drained percutaneously. 1,4,6,10,14 We noted, as others have, that most of the fistulas were not apparent at the time of PD. 6,10 May became clinically obvious because of a change in the character of the drainage fluid, and others were noted on routine follow-up sinograms.

Several days of drainage may be required for resolution of acute inflammation before communication becomes detectable by retrograde contrast injection. If a fistula is identified, a catheter should be positioned near the site of leakage. The time of catheter drainage is longer than for abscesses without fistulas. Ideally, fistulas will heal spontaneously, unless there is a distal obstruction of the duct or viscus, or if neoplasm involves the tract. In our series 45% resolved without surgery, which is similar to a 53% cure rate reported by Lang.

The diagnostic value of PD with sinography is significant but rarely mentioned." Of the eight patients who had PD after unsuccessful SD, four had enteric fistulas, all of which were previously unrecognized. We feel that even if surgery is ultimately necessary, preoperative PD with sinography may be useful to define the anatomy of the abscess and possibly identify the causative fistula.

Technical errors are common causes

of failed PD. An error common to our study and others was premature removal of the catheter.6 The volume of drainage cannot be used as the sole criterion for catheter removal. If the catheter is pulled prematurely, the skin site will close, and the non-sterile cavity will reaccumulate infected fluid. We feel that contrast injection through the catheter (a sinogram) must be used to follow healing of the cavity. Only when the cavity is completely resolved can the catheter be removed, which usually requires at least three weeks. We had no recurrences when this protocol was followed.

Another cause of failure is incomplete drainage, i.e., failing to identify and drain all areas of loculated abscess.6 A CT scan, if obtained immediately after PD, should show no residual fluid. If residual pockets remain, additional catheters should be placed immediately. If the patient remains febrile after PD, a repeat CT scan should be obtained for identification and drainage of residual abscesses. Incomplete drainage can also be due to blockage or kinking of the catheter. If the catheters are irrigated once daily by the radiologist or someone very familiar with drainage catheters, functional problems will be identified immediately. If malfunction is suspected, a sinogram should be obtained to identify the cause (i.e., occluded catheter, catheter malposition, or undrained, loculated areas). These problems can be alleviated by replacing, repositioning, or adding catheters.

Some abscesses are not suitable for PD. These include: (1) those with associated surgical problems such as bowel ischemia, bowel obstruction, and non-contained bowel perforation; (2) those without a safe percutaneous access route (some high subphrenic, interloop, and pelvic abscesses);^{3,4} and (3) pancreatic phlegmons which contain solid, necrotic tissue. Likewise, some patients with abscesses are not good candidates for SD. These include: (1) those who are grave operative risks because of septic shock, severe coagulopathy, or severe cardiopulmonary disease, and (2) those patients who refuse surgery or blood transfusions.9

The majority of patients with intraabdominal abscesses have a safe percutaneous access route and do not have other obvious surgical problems. These patients probably deserve PD as the initial therapeutic procedure because the success rate is as high as SD, and the procedure is less invasive. Close clinical and radiographic follow-up will identify those patients who require surgical intervention. 4.5,9,11,12

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Diagnosis of Annular Pancreas by Computed Tomography: Case Report

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Recent technological advancements have made evaluation of many pancreatic disorders straightforward that heretofore were inaccessible to conventional radiologic methods and only diagnosed at laparotomy. Annular pancreas is a congenital anomaly rarely becoming symptomatic in adult life. We report a case diagnosed before surgery to show the value of CT in the definitive diagnosis of this disorder.

Case Report

A 45-year-old man was referred for abdominal CT because of recurrent upper abdominal pain, nausea and vomiting. Cross-sectional images at the level of the pancreatic head showed a soft tissue density surrounding the second portion of the duodenum (Figure 1). A diagnosis of annular pancreas was entertained.

An upper GI study showed concentric narrowing of the distal descending duodenum with proximal stasis (Figure 2). A previous upper GI done for a similar complaint two years ago was

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Abstract

A case of annular pancreas diagnosed by computed tomography before surgery is reported. CT appears to be the imaging modality of choice in the non-invasive work-up of this rare congenital anomaly.

KEY WORDS: Annular Pancreas, Upper G.I., CT Diagnosis, Gastrograffin®

reported to show duodenal ulcer. Esophagogastroduodenoscopy performed before the CT showed narrowing of the second portion of the duodenum without mucosal abnormal-

ities. Biopsy obtained showed nonspecific inflammatory changes. No perendoscopic panereatogram was done.

At surgery, pancreatic tissue was found encircling the descending duodenum. Intraoperative gastroduodenoscopy was unremarkable. A jejunoduodenostomy with side-to-side anastomosis was performed. The post-operative course was uneventful. The patient has been asymptomatic.

Discussion

Annular pancreas is a congenital anomaly becoming symptomatic as a neonate, or usually later in life.^{5,8} Autopsy series^{9,11} and retrospective



FIGURE 1: Single slice of CT scan at the level of the head of the pancreas. The duodenum is surrounded by the annular pancreas.

series¹³ show an incidence of about 1-3/20,000 cases.

Clinically, the adult patients present with symptoms of complete or partial upper G.I. obstruction. There also has been shown to be associated coexistent pancreatitis (14%), duodenal ulcer (22%), and gastric ulcer (7%) disease.¹²

In the past, diagnosis was difficult, limited radiographically to upper G.I. contrast studies.⁵ In the 1970s, with the arrival of ERCP, several cases were diagnosed and described.^{2,3} However, most recently with the improvement of computed tomography technique and detail, this diagnosis can be made with very high certainty preoperatively.^{1,10}

Summary

Our patient had clinical symptoms compatible with recurrent incomplete duodenal obstruction. The upper G.I. barium study suggested a concentrically narrowing lesion in the descending duodenum. The CT examination with Gastrograffin contrast revealed tissue extending from the pancreatic head and encircling the second portion of the duodenum. Cuts above and below the lesion showed normal small bowel.

Patients with upper gastrointestinal symptoms compatible with recurrent partial bowel obstruction and radiographic findings of duodenal narrowing are prime suspects of having annular pancreas as the cause of obstruction. Computed tomography with oral water soluble contrast agents is the examination of choice in the screening of these patients, and definitive diagnosis of annular pancreas can be made with certainty.

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The Obstructive Sleep Apnea Syndrome: Pathophysiology, Diagnosis and Treatment

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"... the setting sun cast a rich glow on the faces of their entertainers, and fell upon the form of the fat boy. His head was sunk upon his bosom; and he slumbered again."

> The Pickwick Papers Charles Dickens

HE OBSTRUCTIVE SLEEP apnea syndrome (OSAS) is one of the more common sleep/wake disorders causing chronic somnolence. It is estimated that the OSAS affects about 3.5% of men between age 40 to 60¹ and is 60 times more common in men than in age-matched women. OSAS is exacerbated by increasing age, obesity, hypothyroidism, lung disease, nasal obstruction or anatomical narrowing of the oro and hypopharynx.

Pathophysiology

The negative pressure generated by normal inspiration favors the collapse of the non-rigid oro and hypopharyngeal portions of the upper airway. Normally this collapse is prevented by an inspiration-linked contraction of the

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pharyngeal dilating muscles (the genioglossus and geniohyoid muscles).² However, with sleep, the tone of these pharyngo-dilator muscles is diminished, and may be lost entirely during rapid eye movement (REM) sleep. If mild, this sleep-related decrease in pharyngo-dilator muscle tone results in only a partial collapse of the airway during inspiration, manifested by snoring.

With increasing age, weight, or in the presence of an anatomical narrowing of the upper airway, the inspiratory collapse is more complete, with resultant loss or marked impairment of inspiratory airflow during sleep, manifested by an obstructive apnea or hypopnea with ceasation of snoring.

Since respiratory and pharyngeal dilator muscle tone is lowest during REM sleep, disordered breathing events are often most severe during this stage of sleep. Obstructive apneas and hypopneas usually last at least 15 seconds, but often last 40-60 seconds or more. With loss of respiration, arterial oxygen tension falls, in some cases, to below 30 mm Hg. There is frequently a marked cardiovascular response to the apnea dominated by parasympathetically mediated bradycardia and dramatic increases in pulmonary and systemic blood pressures.³

The obstructive disordered breathing event is terminated by a partial arousal to a lighter sleep stage or complete wakefulness, triggered by the increased effort of breathing and/or hypoxemia. This arousal restores airflow by increasing dilator muscle tone in the upper airway. With respiration normalized, sleep returns and the apnea/arousal cycle is repeated, often hundreds of times per night.

Major Signs and Symptoms

The recurrent apnea-induced arousals relentlessly fragment sleep and prevent the more restful stages of sleep: stages 3 and 4. This results in chronic waking somnolence, which is the most common symptom of the OSAS. Unfortunately, the sleepy patient often does not seek medical attention until suffering an actual or near automobile or industrial accident. Since chronic sleepiness impairs memory acquisition, OSAS patients (like those with narcolepsy) may complain of episodes of automatic behavior and amnesia, as well as intellectual deterioration and personality changes. The relatively common presentation of intellectual decline and somnolence in a middle-aged patient with OSAS may be identical to that of a patient with a brain tumor, particularly when hypoxia-induced morning headaches are present.

The recurrent and often profound nocturnal hypoxemia may cause not only morning headaches but may eventually result in pulmonary hypertension and right heart failure with edema and polycythemia. Nocturnal sinus bradycardia with varying degrees of AV block is the most common apnearelated arrhythmia, and is sometimes complicated by sinus arrest or ventricular and supraventricular escape rhythms. These arrhythmias result from an increased vagal tone in response to the sleep disordered breathing. The repetitive nocturnal alternation of apnea-related bradycardia with arousal-related tachycardia can be quite striking on Holter electrocardiographic monitoring.4

Body movements associated with the apnea-triggered arousals may be quite

prominent, and result in a history of "thrashing" or "seizuring" during sleep.

Habitual snoring is present in most patients with the OSAS, but is also present in up to 30% of normal men above age 40.

The vast majority of OSAS patients complain of unremitting somnolence, and have no recollection of their brief nocturnal microarousals. However, about 5% of patients with OSAS will present to their physician with a complaint of "insomnia," reflecting either their sense of nonrestorative sleep, or a subconscious perception of fragmented sleep. A "routine" prescription for sleeping pills may blunt the reflex arousals, terminating the sleep apneas, thereby prolonging the sleep disordered breathing events, exacerbating the associated hypoxemia and possibly resulting in death. Sleeping pills should never be prescribed for any patient with possible sleep apnea, particularly if there is a history of interrupted snoring or any of the symptoms and signs listed above.

Despite Charles Dickens' colorful original description of "Joe, the fat boy" with obesity and somnolence, only about 5% of patients with the OSAS are Pickwickian (i.e., morbidly obese with somnolence and alveolar hypoventilation). About 40% of OSAS patients are more than 30% over their ideal body weights, according to the Metropolitan Life Insurance Company's tables.⁸

Initial Evaluation and Staging

The history and physical examination should determine the presence and severity of the above neuropsychiatric and cardiopulmonary symptoms and signs. As with the other disorders of excessive somnolence, the OSAS patient often does not fully realize the severity of sleepiness, which is more accurately determined by a discussion with the spouse, and the taking of a detailed accident history.

In addition to the neuropsychiatric and cardiopulmonary systems, special

attention should be paid to the oropharyngeal examination, screening for anatomic problems such as micrognathia, retrognathia, macroglossia, tonsilar hypertrophy, etc. Since hypothyroidism exacerbates or causes about 1% of OSAS, thyroid status should be specifically addressed. Arterial blood gases, complete blood counts, chest radiograph, electrocardiogram, pulmonary function testing, head computerized tomography, and other laboratory tests may also be indicated, depending upon the clinical situation.

Since snoring is common and there are many non-OSAS causes of chronic sleepiness, overnight polysomnography (OPSG) is necessary to differentiate sleep apnea from other sleep/wake disorders⁶ and to stage the severity of the sleep-related disordered breathing.⁵

The OPSG should specifically quantify the following sleep variables: 1) the number of apneas and hypopneas per hour (disordered breathing index), 2) distribution of central vs obstructive disordered breathing events, 3) average and maximum duration of the disordered breathing events, 4) average and minimal oxygen desaturation associated with the disordered breathing events, 5) associated cardiac arrhythmias, and 6) severity of the resultant sleep disruption.

Since the OSAS is usually exacerbated by REM sleep, this analysis must be done and reported for both non-REM and REM sleep. Because REM sleep is normally not present during daytime sleep, "daytime nap studies" are not adequate to diagnosis or stage the OSAS and should be abandoned.

Multiple Sleep Latency Testing (MSLT) should also be done on the day following overnight polysomnography to directly quantify the severity of sleepiness and to screen for narcolepsy, another common cause of excessive somnotence.⁷

General Management Options

Physicians now have access to a wide variety of treatment options for the

OSAS with varying risks and effectiveness. 9.10 The urgency and aggressiveness of the management plan must be based upon a rational assessment of the severity of the disorder. Although a widely accepted specific staging system for OSAS has not yet been developed, most sleep/wake specialists utilize the following data to estimate disease severity and arrive at the optimal management plan for their patients:

- 1) Neuropsychiatric status as determined by the severity of somnolence measured directly by the MSLT, and indirectly inferred by the patient's history of automobile and industrial accidents, amnesia, automatic behavior, and intellectual decline:
- 2) Quantitative sleeping cardiopulmonary information from the OPSG (quantification of number, type and duration of apneas and hypopneas, degree of resultant hypoxemia and severity of associated arrhythmias); and
- 3) Waking cardiovascular status based on historical and physical examination evidence of right heart failure, pulmonary hypertension and refractory systemic hypertension.

It is now generally agreed that most patients with sleep laboratory evidence of significant obstructive sleepdisordered breathing, accompanied by either neuropsychiatric or waking cardiovascular complications (as discussed above), should be aggressively managed with surgery or continuous positive airway pressure (CPAP) usually combined with a weight reduction program and additional medical treatment as indicated. Surgery for patients with an anatomical cause for their OSAS would ideally be delayed until the symptoms can be ameliorated with CPAP to reduce operative morbidity.

Patients with only mild to moderate sleep apnea on OPSG without significant neuropsychiatric or cardiovascular complications usually should be treated conservatively with a weight reduction program and additional medical treatment as indicated. Close follow-up is required to detect worsening of the OSAS with increasing age and weight.

All patients with the OSAS should be admonished to avoid sedative medications including alcohol, narcotics, soporifies, etc. Weight gain should also be avoided.

Specific Treatments

A weight gain of 20-30 pounds often seems to accompany the transition from an asymptomatic loud snorer into a hypersomnolent sleep apneic. Accordingly, weight loss has been repeatedly documented to ameliorate the severity of sleep apnea. The amount of weight loss needed may be as little as 5-10% and occasionally is quite dramatic. Unfortunately, weight loss takes a great deal of time, and relapse is common. Weight loss as a sole treatment may be appropriate for those with mild OSAS, but should be used only as an adjuvant treatment in those with more severe forms of OSAS.

Nocturnal oxygen therapy may be helpful in some by improving nocturnal oxygen desaturation, but it has no effect on improving hypersomnolence. In addition, oxygen therapy has been documented to acutely worsen sleep apnea by blunting the hypoxemia-induced reflex arousal. For these reasons, oxygen therapy should not be started without OPSG confirmation that it is not detrimental in a given patient.

Despite earlier enthusiasm, the respiratory stimulant, medroxyprogesterone acetate, is of little use in the current treatment of sleep apnea except in patients with the obesity-hypoventilation (Pickwickian) syndrome. The drug has significant side effects, including thromboembolism, weight gain, and impotence.

Protriptyline is a non-sedating tricyclic antidepressent shown to ameliorate sleep disordered breathing events and improve nocturnal oxygenation and daytime somnolence. Reduction in intensity of REM sleep, and a general increase in sleeping

pharyngeal dilator muscle tone are thought to underly its effectiveness. Prominent anticholinergic side effects often limit the dosage. Protriptyline is contraindicated in the presence of ventricular arrhythmias.

Continuous positive airway pressure (CPAP) is a recently developed treatment that prevents inspiratory upper airway collapse.10,15 Room air under a preset pressure (generally 5 to 15 cm H₂₀) is delivered continuously to the patient via a tight-fitting mask, providing a pneumatic splint for the collapsable portion of the oro and hypopharynx. In most patients with OSAS, CPAP is immediately effective at reversing the sleep-disordered breathing and its accompanying neuropsychiatric and eardiovascular complications. Since this marked efficacy is without known contraindications, CPAP has become the initial treatment of chioce for patients with significant OSAS.

CPAP can be used alone as a longterm treatment, but is best combined with a weight loss program. Even patients with a clear-cut anatomical cause of the OSAS usually respond, allowing these patients to be in better condition for subsequent surgery. Unfortunately, CPAP is sometimes not well tolerated due to mask discomfort and feelings of suffocation, nasal drying or rhinitis. Initial adjustment of the CPAP requires polysomnographic monitoring to determine the optimally effective and tolerable pressure as well as to ensure that no additional therapy is required since occasionally patients do not completely respond to this therapy.

Tracheostomy is one of the most effective surgical treatments for OSAS and remains the "gold standard." However, tracheostomy is poorly accepted by most patients, and has significant long term morbidity, particularly in OSAS patients who often have short, fat necks. As a result, tracheostomy has been largely replaced by CPAP and newer surgical techniques such as uveopalatopharyngoplasty (UPP), but still is useful in pa-

tients with life-threatening OSAS who have failed CPAP and UPP. Tracheostomy is also sometimes used as a temporary precautionary adjunct to UPP.

Uveopalatopharyngoplasty¹⁶ consists of extensive surgical excision of redundant oropharyngeal soft tissue of the soft palate, uvula, tonsils, and posterior lateral pharyngeal walls. Over a thousand UPPs have now been done with varying reported success rates. Although most patients report subjective improvement following UPP, follow-up OPSGs document objective improvement (50% reduction in the disordered breathing index) in only about 60%.17 Sleep continuity and architecture are more commonly improved, perhaps accounting for many patients' sense of improvement. UPP logically would be most effective when the oropharynx is the site of sleeprelated airway collapse.

Techniques purporting to distinguish an oropharyngeal from hypopharyngeal site of airway collapse have been developed. Preselection of patients for UPP by one of these, fiberoptic nasopharyngoscopy during a muller maneuver, has been reported to improve the objective success rate to 80%. ™ Complications of UPP include nasal regurgitation during speech and swallowing. UPP is indicated for those patients with marked OSAS due to oropharyngeal obstruction who are felt to be satisfactory surgical risks, particularly when young or intolerant of CPAP.

Summary

The obstructive sleep apnea syndrome (OSAS) is a sleep/wake disorder resulting in significant neuropsychiatric and cardiopulmonary complications, particularly in men above age 40. Since this disorder is relatively common, many primary care and other physicians are called upon to manage patients with suspected or documented OSAS. This review briefly summarizes the current knowledge of the patho-

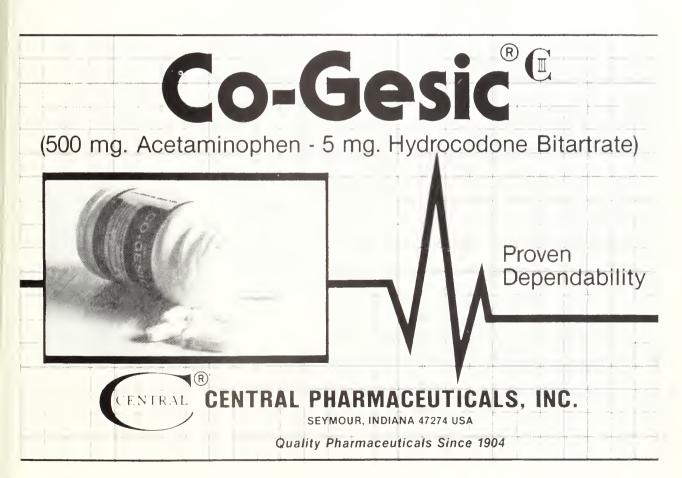
physiology, clinical manifestations, and succinct diagnostic evaluation of the OSAS. Specific medical and surgical therapies are also discussed and summarized.

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CT-Guided Aspiration Biopsy Using the E-Z-EM Needle

RICHARD V. CHUA GONZALO T. CHUA, M.D. ANASTACIO C. NG, M.D. MICHAEL A. KINZER, M.D. Indianapolis

Piration biopsy of lung and abdominal masses has been well reported as a safe and effective means of establishing tissue diagnoses of various abnormalities. 2.3.17.18 CT-guided procedures of the lung and abdomen have become accepted as an accurate means of evaluating difficult lesions which may be poorly visualized under fluoroscopy or radiography. 2.3.8.11.17 Various aspiration and tissue core biopsy needles have been examined for technical advantages, accuracy and complication rates. 1.66

We report our experience of CT-guided percutaneous fine-needle aspiration biopsy using a 21 gauge E-Z-EM (E-Z-EM, Inc., Westbury, New York) aspiration needle for lung and abdominal lesions. The purpose of this study is to evaluate the efficacy of the E-Z-EM needle including its technical advantages, success rate for obtaining

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Abstract

One hundred percutaneous fineneedle aspiration biopsies of the lung and abdomen were performed on 91 patients using a 21 gauge E-Z-EM needle (E-Z-EM, Inc., Westbury, New York) under computed tomography (CT) guidance over an 11-month period. Biopsies were done of the lung, liver, pancreas, retroperitoneum, bones, and axilla.

Success rates for obtaining adequate specimens for cytologic diagnosis were especially high in liver (100%), pancreatic (100%), and axilla (100%) biopsies. Success for lung biopsies was 90%, retroperitoneal biopsy 86%, and bone biopsy 88%. Overall success rate for all sites was 91%.

Insufficient tissue was obtained for cytologic diagnosis in nine biopsies.

Complications in this series included 14 pneumothoraces and two episodes of minimal hemoptysis. Five patients required percutaneous catheter placement. Overall complication rate for all biopsies was 16%.

The biopsy procedure was facilitated by the E-Z-EM needle and specialized 10 cc syringe which allowed for a single-pass multiple aspirate technique. The presence of an experienced cytopathologist allowed for immediate interpretation of specimens.

Our experience of fine needle aspiration biopsy using the E-Z-EM needle under CT guidance has demonstrated it is particularly useful for obtaining tissue in the diagnosis of pulmonary nodules which may be poorly visualized under fluoroscopy or radiography, or lesions in the abdomen.

sufficient tissue specimens for cytologic diagnosis, complication rate, and correlation rate with final diagnosis.

Methods

Two hundred twenty percutaneous biopsies were performed under CT guidance at Methodist Hospital of Indiana, Inc., between August 1, 1985 and July 1, 1986. One hundred of these were performed using the 21 gauge E-Z-EM aspirating biopsy needle. The remaining percutaneous biopsies were performed using other needles. A total of 91 patients were biopsied 100 times using the E Z EM needle; lesions involved the lung (68 cases), the liver (9 cases), the pancreas (7 cases), the retroperitoneum (7 cases), the bones (8

cases), and the axilla (1 case).

All procedures were performed under CT guidance using a GE CT 9800 scanner. After informed consent, patients were placed either supine or prone on the scan table. Several 1 cm slices were obtained through the area of abnormality. CT scans were reviewed for selection of needle approach.

In some cases patients were repositioned laterally to maintain an extrapleural trajectory, or the shortest distance from skin to lesion, in that order of priority. In patients who had obtained previous CT scans in the area of abnormality, smaller CT slices were obtained, typically 3-5 mm. Needle approach was selected to avoid pulmonary and brachiocephalic vessels, aorta, or bony structures.

The patient's skin was then marked with a paper clip in the axial plane that best demonstrated the lesion or provided easiest access. Repeat scan provided initial image of marked skin. Using this scan and previous scans, the depth and angle of needle trajectory was calculated. After skin preparation, the patient was locally anesthetized at the point of needle insertion. While the patient held his or her breath for 2-3 seconds during mid-inspiration, a 21 gauge E-Z-EM needle, with stylet in place, was inserted to the predetermined depth. Location of needle tip within the lesion, or within the most appropriate part of the lesion, was verified by repeat scanning. Once the needle tip was in place, the stylet was removed.

Samples were obtained by aspirating with a special heparinized 10 cc syringe with locking mechanism which maintained constant and uniform suction. Using a single-handed technique, the needle and syringe were gently moved back and forth, and rolled between the fingers to provide retrieval of tissue. The needle and stylet were left in place while awaiting initial cytologic diagnosis. This allowed for a single-pass multiple aspirate technique. Aspirated specimens were immediately smeared and stained by the cytologist in an adjacent room for evaluation.

Patients were asked to remain on the CT table under quiet respiration while initial cytology was performed. Approximately 5-10 minutes elapsed while aspirate was processed and the patient remained on the table with needle in place. Fragments of tissue were sent for cell block studies. Once the cytologist gave an indication of adequate specimen, the needle and stylet were removed and the patient's skin cleaned and bandaged. If an indication of inadequate specimen was given, a second or third aspiration was performed without needle reinsertion.

Patients were sent home or back to their room with post-procedural care instructions. In cases of lung biopsies, all patients had an upright expiration

TABLE 1 Accuracy of CT-Guided E-Z-EM Needle Aspiration Biopsy

Location of Biopsy	Number of Procedures	% Success	% Correlation
Lung	68	90%	92%
Pancreas	7	100%	71%
Liver	9	100%	89%
Retroperitoneum	7	86%	83%
Bones	8	88%	100%
Other	1	100%	100%

chest film 15 minutes after the procedure. The average time consumed by CT scanning and biopsy procedure was 30-45 minutes. When previous CT scans were available the entire procedure was reduced to 20-30 minutes.

Results for successful biopsy were tabulated as successful if the fluid cytology report read "satisfactory" or "adequate" cellularity, or was accompanied by a classification and description of cell type. Cell type classifications included: Class I - normal cells only; Class II - slight atypia may be inflammatory (no malignant cells); Class III - marked atypia - suspicious of malignant cells; Class IV - abnormal cells consistent with malignant cells.

In an attempt to correlate cytologic diagnosis obtained from a biopsy procedure with the patient's final diagnosis, patients were followed up from one to 12 months. Final diagnosis in all patients was confirmed by surgery, autopsy, or clinical course.

The success and correlation rates of the 21 gauge E-Z-EM aspiration biopsy needle were calculated and the results presented.

Results

Of the 91 patients who underwent aspiration biopsy using the E-Z-EM needle, 86 were biopsied only once. Five patients were biopsied twice, and two patients were biopsied three times. No patient was biopsied more than three times.

Of the five patients biopsied twice, three of the initial aspirations resulted in insufficient cellularity for cytologic diagnosis. When repeated, two were found to be successful while the third was reported as unsatisfactory. The remaining two patients had repeat biopsies in different locations to obtain pathological evidence of metastatic disease. The two patients who were biopsied three times also were repeated in different locations either because of suspicion of another lesion or, again, to obtain evidence for metastases. All of these biopsies were reported as successful for cytologic interpretation.

The average age of patients who underwent this procedure was 65 years. Eighty-five percent (85%) of the procedures were performed on patients older than 50 years. Patient ages ranged from 24 to 88 years. Nearly half (48%) of all biopsy procedures were performed on outpatients. Men accounted for over half (57%) of the patients who underwent this procedure.

Biopsies of the lung accounted for 68% of the total series (*Table 1*); 44 procedures involved the right lung, 24 in the left lung. In both lung fields, about twice as many biopsies of the upper (apex) zone were performed as the lower zone, and about half as many in the mid (hilum) zone. Lesions in the lungs ranged in size from 0.8 to 7 cm with the average size being 3.1 cm. Over 60% of pulmonary lesions were smaller than 3 cm. Biopsies of the pancreas accounted for 7% of the series (*Table 1*). Five were done in the head of the pancreas and two in the tail.

TABLE 2 Complications from E-Z-EM Needle Biopsy in the Lung

Complication	Occurrences	
Small Pneumothorax (1-15%)	9 (13.2%)	
Moderate Pneumothorax (16-30%)	5 (7.4%)	
Minimal Hemoptysis	2 (2.9%)	
Total Complications Due To		
Needle Biopsy	16 (23.5%)	

Five patients required percutaneous radiologic chest catheter placement and suction although none were symptomatic.

Liver biopsies totaling 9% included eight in the right lobe and the other in the left lobe (*Table 1*).

Retroperitoneal biopsy accounted for 7% of the series including two procedures each in the adrenals and renal hilar nodes, and one each in a left periaortic node, pelvic lymph node, and common iliac node. Bone biopsies totaling 8% included five procedures of the spine, two of the ribs, and one of the superior pubic ramus. All eight bone biopsies were performed on lytic lesions. One biopsy was performed in the left axilla (*Table 1*).

Overall success for obtaining adequate specimens in the lungs was 90% ($Table\ t$). Biopsies of the lung were successful in 41 of 44 (93%) cases involving the right lung and 20 of 24 (83%) cases in the left. Biopsies of the right lung were more successful in the mid (100%) and lower (100%) zones and less so in the upper (88%) zone. In the left lung, greater success was noted in the mid (100%) zone followed by the upper (85%) zone. Least successful of all lung biopsies was noted in the left lower (71%) zone.

Successful specimens were obtained in all (100%) biopsies of the pancreas and liver. Retroperitoneal biopsies were successful with the exception of one procedure involving a common iliac node. Overall success rate in the retroperitoneum was 86%. Biopsy of the bones was highly successful (88%) with the exception of a lesion in the L4 vertebral region. The only biopsy of the left axilla was successful for

cytologic interpretation (Table 1).

Unsuccessful specimens were obtained in a total of nine procedures on eight patients. There were three unsuccessful aspirations in the right upper lung zone and two each in the left upper and left lower zones. Unsatisfactory specimens were, as mentioned before, obtained in an L4 and common iliac node aspiration.

Diagnostic accuracy in this series was evaluated by comparing the cytologic diagnosis of successful aspirations with the patient's final diagnosis. Overall diagnostic accuracy for all sites was 90%. Cytologic diagnosis of lung biopsies had a high correlation (92%) with final diagnosis. Accuracy of cytologic diagnosis was 71% in the pan-

creas and 89% in the liver. Diagnosis from retroperitoneal biopsy was 83% accurate. Accuracy was 100% in the bones and 100% in the left axilla (*Table 1*).

Sixteen complications occurred following CT-guided aspiration biopsy using the E-Z-EM needle. Fourteen patients developed pneumothoraces and two experienced episodes of minimal hemoptysis (Table 2). Of the 14 patients who developed pneumothorax, five required percutaneous intubation of 5-French or 7-French multi-hole catheters for treatment. None of these patients experienced respiratory distress; however, they were intubated as a preventive measure after evidence of pneumothorax appeared in either a post-procedure chest film or CT scan. All of these patients were sent back to their rooms and the catheters removed later the same day. No complications of abdominal biopsy and no deaths resulted after CT-guided aspiration biopsy in this series.

Discussion

Haaga and Alfidi⁸ were the first to describe a series of aspiration biopsy procedures under CT control and offered the view that it is the single most accurate method of performing biop-



FIGURE 1: CT scan of a 1.5 cm right apical lung nodule. Note a paper clip on the patient's skin used for localization of lesion and selection of needle approach. Biopsy resulted in diagnosis of adenocarcinoma.

sies. At our institution, most lung and abdominal aspiration biopsies during the past four years were performed under CT guidance. Prior to this, most aspiration procedures were performed under fluoroscopic or sonographic guidance.

CT guidance permits the most accurate placement of a needle tip into very small lesions or into the periphery of cavitary lesions with areas of central necrosis. CT provides important localization of lesions which may be poorly visualized fluoroscopically, sonographically or radiographically. In the lung and mediastinum CT is the examination of choice when biopsies of difficult apical, hilar, or paraspinal masses are to be performed. In these areas CT provides maximal information on the needle's proximity to major vessels, nerves, or bony structures. In the abdomen and retroperitoneum, CT is again the examination of choice. It provides accurate localization of small, deep-seated lesions and accommodates problems related to bowel and vascular positions. The cross-sectional format of CT permits choice of the most appropriate needle approach in both the chest and abdomen to a suspected lesion (i.e., anterior, posterior, lateral, or oblique). The ability to aspirate small lesions and those close to important vascular structures is illustrated in Figures 1-3.

Our experience in the last 11 months with the 21 gauge E-Z-EM needle has surpassed the performances of other needles we have used for aspiration biopsy procedures. While other authors have reported results using the 22 gauge Chiba^{11,17,18} or the 22 gauge Madayag, ^{1,2} we have obtained more than satisfactory performance results with the 21 gauge E-Z-EM.

Its small size and "keyhole" cutting surface permits a high degree of cellular recovery for cytologic diagnosis (Figure 4). The cutting surface allows for fine manipulation of the needle in one hand while still recovering adequate cellularity. Our experience shows that the E-Z-EM needle

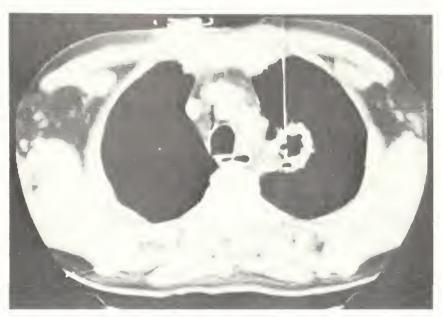


FIGURE 2: CT scan of a left upper lobe cavitary lung lesion with E-Z-EM needle in place.



FIGURE 3: CT scan of a 2 cm left renal hilar node with needle in position for aspiration. Diagnosed as metastatic adenocarcinoma of the prostate.

does not, however, obtain enough tissue for histologic studies. For biopsies requiring tissue cores we use the well reported 14 gauge Travenol Trucut.^{1,6,17} The E-Z-EM needle and trocar/stylet can also remain in a lesion while initial aspirations are checked for adequate cellularity. This single-pass, multiple aspirate technique ability was found to



FIGURE 4a: (a) E-Z-EM needle with stylet in place.

be extremely advantageous to the patient in reducing the number of needle passes made in order to obtain adequate specimens. In addition, we have found that the accompanying 10 cc syringe with specialized locking mechanism permits constant and uniform suction while allowing for a single-handed technique. We did not encounter any difficulties with the use of this needle/syringe complex. Unlike reports of difficulties with other fine needles for deep lesions because of marked flexibility and tendencies of deflection, we found the 21 gauge E-

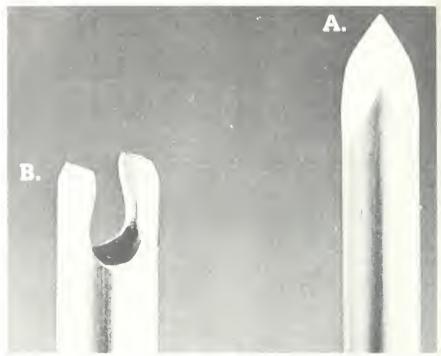


FIGURE 4b; (b) Needle components revealing "keyhole" cutting surface for aspiration biopsy.

Z EM to be optimum for deep lesions in avoiding important organs and vascular structures.

The success rate for obtaining adequate specimens in lung biopsies was maximal except for those lesions in the apices and in the left lower lung base. This is perhaps more a reflection of the precision in localization of the needletip in difficult areas around bony structures (i.e., ribs, scapula, sternum, clavicle), greater vessels, and the pericardium than the performance of the needle in obtaining adequate cells. Our results in the lung are comparable, however, to previously reported series. 12,11,115

The results for success in pancreatic and hepatic biopsies were maximal in showing the efficacy of the E-Z-EM needle for biopsies of the abdomen. Results for success in the retroperi toneum also suggest the advantages of using the E-Z-EM needle for small nodal lesions in difficult areas. Our only unsuccessful result in the retroperi-

toneum was found, on follow-up of the patient, to be a normal study of a common iliac node. Upon review we determined that an error in interpretation by a radiologist and not the inadequacy of the needle directly affected the success of the aspiration procedure. The results of bone and axilla biopsies again suggest the efficacy of the E-Z-EM needle for a variety of lesions. The only unsuccessful result in these areas fortunately turned out to be an infection of the L4 region rather than tumor.

Although some of our patients (16) experienced complications to the procedure, none required surgery, blood transfusion, or surgical chest tube placement. None of these patients suffered any distress but were intubated with small radiologic catheters to immediately aspirate the pneumothorax. After rescanning, if there was evidence of the pneumothorax being completely or almost completely resolved, no further treatment was administered.

All catheters were removed later the same day and some patients sent home. Patients who developed pneumothoraces were all technically difficult biopsies because of the small size of the lesions or because the lesions were covered by bony structures or vessels. Our overall complication rate of 16% with 5% requiring tube placement is comparable to other previously reported series. 1-3.7-8.11.17.18

The advantages of this technique indicated by the high success and correlation rates and low complication rate of this procedure using the 21 gauge E-Z-EM needle are an indication of the efficacy of this needle for percutaneous fine-needle aspiration biopsy. A potential disadvantage experienced in this series suggests that the 21 gauge E-Z-EM needle is not adequate for obtaining tissues for histologic studies. Our experience of CT-guided biopsies using the E-Z-EM needle does, however, confirm the view of its important role in diagnosing focal abnormalities in organs and tissues throughout the body as a safe and useful procedure in patient management.

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Medicine's Lighter Moments

TED L. GRISELL, M.D. Indianapolis

INCE CHRISTMAS is about to be upon us, I recall a situation where a patient appeared in the Emergency Room with the obvious signs and symptoms of a badly neglected gall-bladder illness. She was a very poor patient with stair-steps for children; the oldest I think was about six and the others were younger, and the patient was in about her seventh month of pregnancy with the fifth child. Her tummy was rigid, her vomiting had dehydrated her until she was practically free of urine output; she was jaundiced and obviously in considerable pain and distress.

It was felt that further delay in relieving the gall-bladder illness was fraught with an increased risk. We, therefore, took her to surgery and removed a ruptured gall-bladder, drained the common duct, and the liver and abdominal wall due to the massive infection from the neglected gall-bladder disease.

This probably would not have caused any complication, but the increasing enlargement of the last two months of her pregnancy and the care for her other four children put such a strain on the weakened operative site that a secondary hernia appeared even prior to delivery. The delivery occurred almost on Christmas and the patient's fifth child was saddled with the first and middle names of the doctor who

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THE CHRISTMAS PRESENT

did the surgery and that certainly gave the youngster a poor start in life.

The interesting sequel to the story is that some weeks after the delivery, the mother was taken back to surgery and a satisfactory repair of the huge hernia that was created at the site of the original gall-bladder surgery was performed. The economic status of this family was, of course, very marginal because of the large number of children, and the husband had had some illness that prevented him from working full-time.

Since the whole thing occurred over the Christmas period and the baby came Christmas week, when the final billing period came, we felt that it was wasted effort to try to collect it and we did feel that the family was deserving enough to offer them the opportunity to cancel their bill as a Christmas gift to them and to the new baby.

The reaction I received was heartwarming. Vehement objections were raised by both the husband and wife. This family stated that they would absolutely refuse the gift of the two operations performed and they felt that they would rather owe me all their lives than to beat me out of my proper charges.

Unfortunately, to my knowledge, they have never been able to quite get their heads above water sufficient to make any of the payments that they so vehemently insisted that I not cancel.

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THE OLD PATHOLOGY BUILDING

The Indiana Medical History Museum's Most Priceless Artifact

KATHERINE MANDUSIC McDONELL Curator/llistorian

In 1878, neurologist Edward Spitka claimed mental hospital physicians were "experts at everything but the diagnosis, pathology, and treatment of insanity." Spitka was not alone in his criticism of institutional psychiatrists Other neurologists noted that mental hospital physicians lacked sufficient training in psychiatry and neurology, as well as "a spirit of scientific inquiry. In an era when significant strides were being made in medicine, the institutional psychiatrists shortcomings were particularly glaring.

To answer the growing criticism leveled against their profession, mental hospital superintendents (who at that time were trained physicians) hired pathologists on their staffs and eventually provided facilities for psychiatric research and training. These early laboratories, however, were often woefully inadequate for scientific work. Many facilities probably resembled the first laboratory at Eastern Illinois State Hospital in

The author is curator of the Indiana Medical History Museum as well as Medical Research Historian for the Indiana Historical Society. She holds a Master's Degree in History and Museum Studies, Case Western Reserve University. Cleveland, Ohio.

Correspondence: Indiana Medical History Museum, 3000 W. Washington St., In dianapolis, Ind. 46222.



The turn-of-the-century Medical Library, located on the second floor of the Old Pathology Building, was popular with physicians and medical students alike.

Kankakee. There, the pathologist performed autopsies and did only the most rudimentary laboratory work. The morgue, which was poorly lit and inadequately furnished, doubled as the laboratory.

More elaborate research laboratories were later built at Kankakee and other hospitals, but these facilities consisted of several rooms located in another hospital building. In the late nineteenth century, only the Pathological Department of the Central Indiana Hospital for the Insane (opened in 1896) and the Pathological Institute of the New York State Hospital (established in 1895) occupied separate buildings with ample labora-

tory space and classroom facilities. However, the latter was not located on or even in close proximity to the grounds of a mental hospital. Thus, for many years, the Central Indiana Hospital for the Insane (now Central State Hospital) was the only hospital to have a separate building on its grounds devoted to psychiatric research.

Plans for a scientific department at Central State Hospital were formulated in 1890 by Superintendent Charles E. Wright, but did not materialize until several years later. Wright did hire a pathologist, but he remained at the hospital for only a short period. There is no evidence that



These are the original floor plans for the Pathological Department, now known as the Old Pathology Building. The first floor plan is at left, the second floor at right.

any scientific work was done at Central State during Wright's superintendency (1889-1893).

On October 31, 1894, the hospital's recently appointed superintendent, Dr. George F. Edenharter, revealed his plans for "a medical center" on the hospital grounds. This structure was to be designed "for the use of physicians and medical students of the State, wherein the diseases of the mind and nervous system could be clinically studied and, if possible, determine their cause and formulate methods for their prevention and cure." Two years later, on December 11, 1896, Edenharter's dream was realized when the Pathological Department was formally dedicated.

Upon the building's opening, Dr. Ludwig Hektoen, a well-known Chicago pathologist, noted: "Indiana has taken a great step in the scientific investigation of the causes and cures of insanity." In appreciation for Edenharter's work, the county medical society presented the hospital

superintendent with a "magnificent microscope that cost \$180."

Edenharter indeed deserved praise for convincing a rather conservative and frugal state legislature of the need for expenditures for the state mental hospital (The building housing the Pathological Department, including construction and interior furnishings, had cost the state \$18,000.) A member of the local medical society noted: "It is hard to convince the average legislature that the insane are entitled to much and legislators are apt to look with the most favor on the annual report that shows the least expenditure." Part of Edenharter's success with the legislature may have been because he was more of a politician than a physician, having served as a member of the city council for four years and having run for mayor. He also served as superintendent of City Hospital (now Wishard Memorial).

To assist him in designing the Pathological Department, Edenharter employed the services of Indianapolis

architect Adolph Scherrer. Scherrer. who was a native of Switzerland and had studied architecture in Vienna and Budapest, came to the United States in 1870 and to Indianapolis in 1873. During his career as an architect, Scherrer assisted in the design of the State Capitol building and also designed a number of city school buildings, the city's school for the blind, and the Hoosier Athletic Club. Under the superintendency of Dr. Charles E. Wright, Scherrer had been retained as the Central State's architect. Thus, Scherrer was responsible for designing the many additions to the hospital made during both Wright and Edenharter's tenure.

Although the original plans for the Pathological Department consisted of a one-story, four-room structure, the final product was a two-story, brick building with 4,000 square feet and 19 "working rooms" including a lecture hall (or amphitheater), museum, dissection and autopsy rooms, library, photography room, and three

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OF THE

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1908-1909

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This is the cover of a pamphlet that contained lecture schedules for medical students in 1908-09. Formal classes in psychiatry and neurology were held in the amphitheater.

laboratories. The interior of the building combined beauty with utility and efficiency. The cabinets, woodwork, and laboratory tables were all white oak, an inexpensive, widely available building material. Brass fixtures and copper and tile trim adorned the laboratory tables. The building was illuminated by a combination of gaslight and electricity. Yet, since much of the work in the building centered around use of the microscope. the artificial light was enhanced by natural light through the use of three strategically placed skylights.

The building contained state-of-theart research facilities and laboratory equipment to scientifically study mental illness. In fact, it was claimed to be "the most complete [laboratory] in the country" and "one of the most complete in the world." The editor of the Indianapolis Sentinel noted: "Physicians who have studied in the pathological laboratories of the old world say they have seen nothing to surpass it." Yet, despite the praises lavished on the facility when it opened, neither the research nor the teaching function of the building began immediately after its dedication. In 1898, in his annual hospital report, Edenharter noted that "after many vexatious delays, our Pathological Department has opened for practical work."

In late 1897, a Dr. Robert Hessler from Connersville, Indiana was appointed the hospital's pathologist. Hessler resigned after one year and the hospital had a succession of pathologists for the next two decades, suggesting perhaps internal strife at the hospital. In fact it was not until the late 1920s that the hospital staff conducted original research in the building. Also, unlike the leading psychiatric research laboratories of the period, the Pathological Department at Central State did not incorporate experimental physiology or experimental psychology into its daily laboratory routine. Nonetheless, the work done in the building satisfied a very real need at the hospital: i.e., it greatly improved the ability of the staff doctors to diagnose and treat their cases on the wards. Moreover, it provided the local medical schools with a teaching hospital for neurology and psychiatry.

An integral part of the scientific work conducted in the building was the systematic performance of autopsies. In fact, the reason so little was known about mental and nervous disorders previous to the late nineteenth century, was that physicians had never correlated unusual behavioral patterns with internal abnormalities. Autopsies were performed in the building's mortuary. While the hospital pathologist performed the autopsy, one of Central State's physicians assisted him and another recorded the details of the postmortem. The hospital physician who served as clerk worked in a room immediately above the morgue. The physician performing the autopsy talked through a speaking tube running from the first-floor mortuary to the second-floor records room.

Bodies for use in the mortuary were stored in a small ice house (known as the "dead house") next to the pathology building. Because there was a lack of cadavers for use in the medical schools at this time, body-snatching (especially from state mental hospitals) was prevalent. The administration thus took special measures to insure that bodies would not be stolen from the hospital. Special cages, or "wire corpse protectors," locked over bodies stored in both the mortuary and dead house to prevent their removal.

A small funeral parlor adjoined the morgue on the first floor. Most of the patients admitted to the hospital were poor, and their families could not afford to pay for burial expenses. Thus, the state provided the patient's family with a free funeral. The inclusion of a funeral parlor in a pathology building was not unique to Central State, nor was it purely an act of generosity on the part of the state. Since the research at this time depended upon the regular performance of postmortems and, given the popular prejudice against autopsies, a free funeral gave added incentive to the patient's family to agree to this procedure.

If the deceased patient had no relatives, his or her cadaver was dissected for study purposes in the dissection room (at this time no one could donate their body to science). Often representative or unusual specimens of brains were preserved in jars containing formalin (the fixative properties of formaldehyde were first discovered in 1893) and placed in the building's anatomical museum.

Using the pathological specimens in the museum, along with tissue sections which had been prepared in the building's histology laboratory, the hospital pathologist worked with three medical staff members for two hours each day studying the physiological manifestations of various mental and nervous disorders. Other scientific work in the building included clinical chemistry and bacteriology.

Most of the laboratory techniques associated with these disciplines were fairly new, having been developed during the mid-to-late nineteenth century. After 1901, the bacteriology laboratory, as well as the clinical chemistry laboratory, served primarily as diagnostic facilities for the new 100-bed "Hospital for the Sick Insane." Thus, much attention of the pathologist was focused on acute diseases of patients admitted to the hospital. Furthermore,



The early 1900s Reception Room of the Old Pathology Building remains virtually unchanged today except for the wall stenciling and chandelier.

the bacteriology laboratory was used to test food products for the institution.

A large lecture hall, or teaching amphitheater, was placed in the building to accommodate formal classes in psychiatry and neurology. This acoustically-perfect amphitheater consisted of eight semi-circular wooden tiers rising at one-and-one-half foot intervals from a teaching pit below. The amphitheater was designed to accommodate 150 straight-backed, caned-bottom chairs. Although this room was used to train hospital physicians as early as 1897, formal classes were not held in the amphitheater until 1900.

The hospital's first pathologist, Dr. Hessler, frequently conducted classes for the medical staff in histology, clinical chemistry, bacteriology, and pathology. Many of the hospital physicians had little or no training in these disciplines. Local physicians and medical students also were invited to special clinics in the building.

In 1900, two private, or proprietary, medical schools, the Medical College of Indiana (affiliated with Purdue University) and the Central College of Physicians and Surgeons, held formal classes in neurology, psychiatry, and brain pathology in the building's amphi-

theater. In 1908, the faculties of the proprietary medical schools were merged to form Indiana University School of Medicine. Psychiatry and neurology classes from the school continued meeting in the building until 1956.

Upon opening, the building also contained a complete medical library of approximately 500 volumes (which in a few years was enlarged to 1,000 volumes). Also on the second floor were a photography studio and a dark room. This area was used to photograph patients as they were admitted to the hospital and later, to make photographic enlargements of microscope slides using a photomicrograph, a device which had been recently invented in 1895.

In the 1920s and 1930s, work at the Pathological Department of Central State focused on the study of syphilis. Central nervous system syphilis was one of the major causes of institutionalization in the late nineteenthearly twentieth centuries. At that time, no cure existed for the disease. In the 1920s, Austrian physician Julius Wagner von Jaeregg noted that if live malarial virus were injected into a patient suffering from central nervous



The Bacteriology Laboratory was used to test food products for the hospital in the early 1900s.—Photo by John May

system syphilis, a marked improvement in the patient's condition could be observed.

Until the introduction of penicillin in the 1940s, the malaria treatment of syphilis was the only treatment which had any effect in stopping the disease's degenerative progress. For his work, von Jaeregg received the Nobel Prize in 1927. In 1925, a pathologist named Walter Bruetsch (1896-1977) joined the staff of the hospital. Bruetsch was born in Germany and had studied medicine in Heidelberg and Freiburg. Bruetsch introduced von Jaeregg's treatment to the hospital and continued research on syphilis and its effect on the nervous system. His research on this subject gained him international renown.

Until the 1930s, research centers like Central State Hospital's Pathological Department remained an important part of medical education in neurology and psychiatry. By the 1940s, the educational importance of these centers diminished. Medical schools were urged to upgrade the teaching of neurology and psychiatry by hiring full-time professors and establishing psychiatric research centers on medical school campuses. Thus, by the 1940s, few relics remained of this era of scientific psychiatry. These laboratories were either torn down, remodeled for other uses, or modernized.

Central State Hospital did not close its laboratory in the 1940s. In fact, the laboratories and classroom continued operative until the mid-1960s. During the 1930s, there were some minor alterations in the building (i.e., the lighting devices and floor covering were changed). Yet, the laboratories were never modernized. The white oak woodwork, laboratory tables, and cabinets have remained as they were at the turn of the century. The solid oak amphitheater, too, has survived unscathed. Furniture and laboratory equipment likewise remained in the building.

Even more remarkable, all the postmortem records (including autopsy records, tissue slides, lantern slides, and pathological specimens), as well as Walter Bruetsch's research notes and studies on syphilis, have survived to the present. In fact, the building that once symbolized Indiana's entrance into the age of modern medicine and psychiatry, now enjoys the distinction of being the oldest surviving pathology building in the United States.

The building (now called the Old Pathology Building) is a registered national landmark and is maintained by the Indiana Medical History Museum, a private, not-for-profit corporation. Through special state legislation passed in 1986, the Museum can enter into a 99-year lease (either before or in 1990) with the state of Indiana for the Old Pathology Building, the adjacent "dead house," and five acres of surrounding land. The Museum is now undertaking a capital campaign to raise funds for the building's restoration. Once restored, the Old Pathology Building will once again become an educational facility. This time, however, the history of medicine will be the focus of a variety of programs (such as lectures, symposia, plays, tours, and school programs) planned for the structure. The Museum will also continue to collect artifacts related to the history of health care in the state. These items will be used in traveling exhibits until a separate exhibits hall can be constructed next to the Old Pathology Building. Yet, among its rapidly growing collection of medical memorabilia, the Old Pathology Building still remains the Museum's most priceless artifact.

CHRISTMAS, CHRISTMAS

GENE S. PIERCE, M.D. New Albany, Ind.

DEAR READER, when you have a moment free of the busy bustle of the Holidays, coax your child or grandchild onto your lap and read this new story of Christmas to those listening ears



Once, long ago, a dazzling star hung sparkling in the evining sky; Far down below, a Christ was born as Santa's sleigh was passing by.

The radiant light bathed all of the night, so Santa turned his team to see

Just what was hap'ning in that barn and what the glow might be.

The sled of toys came gliding down With the reindeer prancing all around, Coming to a stop not far away From where the tiny baby lay Close by His Mom, His Dad, and all Of the cows and donkeys in the stall.

The little man in white and red Stood over the babe and, nodding his head, Reached deep into his sack for a toy That would please this little newborn boy. "A cuddly ball will be just right," So he placed it near His hand; When Jesus smiled, a Voice was heard Across the entire land: "Because you gave My Son a gift I now have one for you; From this day forth, dear Santa Claus, You'll be known as St. Nicholas, too. And on this day of every year As your sleigh of gifts goes on its way My Son will celebrate His birth And we'll call it Christmas Day."

So, on the eve of every Christmas When the stars are bright,
Santa Claus will make his rounds
Throughout the slumbering night.
While high above the drifting clouds,
A beautiful sight you'll see;
It is the glow from Jesus' smile
Directed at you and me.

Merry Christmas! Happy Birthday! May this Holiday bring joy. Best Wishes from our ageless Santa Claus And from Jehovah's birthday Boy.



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Antianginal Persantine, Boehringer Ingelheim

Dipyridamole Tablets

ETHINAMATE

Sedative and Hypnotic (nonbarbiturate) Valmid, Dista

Ethinamate Capsules

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AUXILIARY REPORT

Anne Throop, Indianapolis ISMA Auxiliary President 1987-88

American Medical Association-Education Research Foundation is better known by its initials, *AMA-ERF*. This foundation provides funds to medical schools to maintain quality education and to insure that competent students remain in medical school. AMA-ERF has two distinct categories.

The Medical School Excellence Fund provides unrestricted money to be used any way the administration feels would promote quality education. Indiana University uses the Excellence Fund for students participating in a "Summer Research Program." Students in their first year of medical school apply to this program by writing a "research proposal." They spend the summer working with a mentor, and present a summary of their work during a special exhibit known as "Poster Day."

All 33 of the 1987 research students express their enthusiasm for this project, and their appreciation for the funding that enabled them to spend this summer doing basic research. Vance Abshire states in a letter: "It was a great chance to learn what experimental design is all about. I would strongly urge any incoming medical student to participate in some type of research program before graduating from medical school to determine whether or not it could be a possible career option in addition to clinical medicine."

The second category of AMA-ERF funds is the Medical Student Assistance Fund. Indiana University Medical School coordinate this through the IUPUI Office of Scholarships and Financial Aids. Michael Khamie, in a letter, says "the money will help greatly with my first year's expenses." Donald King states, "The monies will be used in financing my senior year at



Rodney Ashley, Northern Area vice-president, gets thank-you hugs from Josette Rolley (left) and Andrea Kuipers for designing this year's Sharing Card in support of AMA-ERF.

the Indiana University School of Medicine. The financial assistance is greatly appreciated and needed."

This year's fund-raising efforts broke all past records, giving Indiana an award for a 25% increase in contributions. All the credit goes to the counties and their chairmen. The most widely used fund-raising project continues to be the Holiday Sharing Card. In Indiana, each county organizes its own project. County chairmen mail letters to medical families requesting donations, choose a card, and usually hand-address the envelopes. Several Indiana counties create their own card and one energetic county hand-delivers its cards. The donation for this service is also a contribution to AMA-ERF. Physicians and their families share their Holiday Greetings while insuring quality training for tomorrow's physicians.

During the Holiday Season, we look for appropriate ways to thank individuals who have been especially gracious to us or our family. A donation (tax deductible) to AMA-ERF is a unique way to say "thank you" to a physician colleague for professional courtesies. A new attractive "Value of Your Service" card has been designed for this purpose. In addition, auxiliaries have used this card to honor auxiliary members as well as physicians with a donation in their name to AMA-ERF.

The ISMA-Auxiliary Board will continue a tradition of sending a "Board Sharing Card." This year Rod Ashley, husband of Susan J. Rogers, M.D., from Grant County, designed a unique "Thanksgiving" card. Rod is active in our state auxiliary and holds a degree in Fine Arts. As members of ISMA-A State Board, this is our way of sending a personal greeting to Board members, past state presidents and county president, while making a donation to AMA-ERF. The Board wishes Auxiliary members and their families Happy Holidays. - Andy Kuipers and Josette Rolley

Your ISMA Auxiliary is responding to the AMA's White Paper Report by working statewide with projects and programs which are impacting on the health problems of adolescents:

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Contact: Anne Throop ISMA-A President 5302 Windridge Drive Indianapolis, IN 46226 (317) 546-6366

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CME QUIZ

10 OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Hydrops Fetalis

CONTINUED FROM PAGES 1150-1157

- 1. Which of the following are commonly found in infants with erythroblastosis?
 - a. anemia
 - b. thrombocytopenia
 - c. hyperglycemia
 - d. decreased reticulocyte count
 - e. hyperbilirubinemia
- 2. Infants with hydrops fetalis, even though anemic, usually have increased blood volumes and would benefit from phlebotomy at birth.
 - a. True
 - b. False
- Erythroblastosis fetalis and hydrops fetalis both refer to the same condition.
 - a. True
 - b. False
- 4. The two most important factors in the development of erythroblastotic hydrops are most likely:
 - a. anemia
 - b. congestive heart failure
 - c. hyperbilirubinemia
 - d. hypoxia
 - e. hypoproteinemia

- 5. What percent of the cases of hydrops fetalis currently are considered nonimmune?
 - a. 10%
 - b. 25%
 - c. 50%
 - d. 75%
 - e. 95%
- 6. Which of the following have been associated with nonimmune hydrops?
 - a. alpha-thalassemia
 - b. fetal arrhythmias
 - c. congenital infection
 - d. twin-twin transfusion
 - e. analbuminemia
- Maternal complications associated with nonimmune hydrops include all of the following except:
 - a. oligohydramnios
 - b. hypoalbuminemia
 - c. severe anemia
 - d. preeclampsia
 - e. polyhydramnios
- 8. The administration of Rh-immunoglobulin should be considered in all of the

- following circumstances except:
- a. Rh-negative mother who just delivered an Rh-positive infant.
- Rh negative woman with an Rhpositive sexual partner and who just had an elective abortion.
- c. Eight-year-old, Rh-negative girl with disseminated intravascular coagulation who just received a transfusion of fresh frozen plasma.
- d. Rh positive woman whose sexual partner has unknown blood type and who has just undergone a spontaneous abortion.
- e. Rh-negative woman whose sexual partner has unknown blood type and who has just experienced a ruptured ectopic pregnancy.
- 9. All of the following are true of Rhimmunoglobulin except:
 - a. Usual dose is $300 \mu g$.
 - Ideally should be given within 72 hours of exposure to Rh-positive blood.
 - Usual dose should be adequate to neutralize even a massive feto maternal hemorrhage.
 - d. May result in a positive antibody titer for several weeks after administration.
 - e. If given appropriately, it should reduce the incidence of Rh sensitization to approximately 1%.

CONTINUED ON PAGE 1216

NOVEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the November 1987 issue: "Perspectives in Otitis Media," by George W. Hicks, M.D., and J. William Wright III, M.D.

1.	e						6.	d
2.	е						7.	b
3.	b,	c,	d				8.	f
4.	c,	f,	a,	e,	g,	h	9.	a
5.	d						10.	c

Answer sheet for Quiz: (Hydrops Fetalis)

 1. a b c d e
 6. a b c d e

 2. a b
 7. a b c d e

 3. a b
 8. a b c d e

 4. a b c d e
 9. a b c d e

 5. a b c d e
 10. a b e d e

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of Indiana Medicine.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Jan. 10, 1988 to the address appearing at the top of this page.

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

LOCAL CANCER AGENCY offers support: The Marion County Cancer Society, Inc., better known as the Little Red Door, has helped patients since 1945. Patients and their families have benefited from a wide range of aid. In addition, the local cancer agency provides health screening for early detection and educational services to primarily Marion County residents.

Free to qualified recipients are medical supplies, transportation to radiation treatments and up to \$500 in assistance with chemotherapy medications. Bandages and counseling are available regardless of income and residency. Public and professional education, including literature, films, a speakers bureau and clinical seminars, is another benefit the Little Red Door provides to both health professionals and the general population. In addition, research grants awarded by the society advance progress being made locally in the diagnosis and treatment of cancer patients.

If you or someone you know could benefit from the Little Red Door's services, please call the agency at 925-5595.

1988-89 SCHOLARSHIP APPLICATIONS AVAILABLE, Pittsburgh, Pa. (September 1987) ... The Oncology Nursing Foundation is pleased to announce that ten \$1,000 undergraduate scholarships and two \$2,500 graduate scholarships will be awarded to registered nurses pursuing Bachelor of Seience and Master in Nursing degrees during the 1988-89 academic year. These scholarships are made possible by grants from the Oncology Nursing

Foundation, Burroughs Wellcome Company, Lederle Laboratories, and Adria Labs.

Criteria and applications may be obtained from the Oncology Nursing Foundation at 1016 Greentree Road, Pittsburgh, Pa. 15220-3125. Applicants must demonstrate an interest in oncology nursing. The deadline date for returning completed applications for the 1988-89 academic year is January 15, 1988.

The ten scholarship recipients will be chosen by members of the Oncology Nursing Foundation Scholarship Review Committee and announced at the Oncology Nursing Society Annual Congress in Pittsburgh, Pa., May 4-7, 1988.

The Oncology Nursing Education was established in 1982 as a reflection of the interest and activities of the Oncology Nursing Society. The goals of the Foundation are the education of professional nurses in the effective eare of individuals with cancer; public education regarding cancer and cancer care; and research to advance the nursing care of individuals with cancer.

ONCOLOGY NURSING CERTIFICATION EXAMINATION 1988, certification is open to nurses who have: 1) RN license, current; 2) three years experience as an RN within the last five years; 3) minimum of 1,000 hours of oncology nursing practice within the last three years. Nursing experience may be in the areas of nursing administration, education, clinical practice or research. The certification examination will be offered May 4, 1988, in conjunction with the 13th Annual Congress of

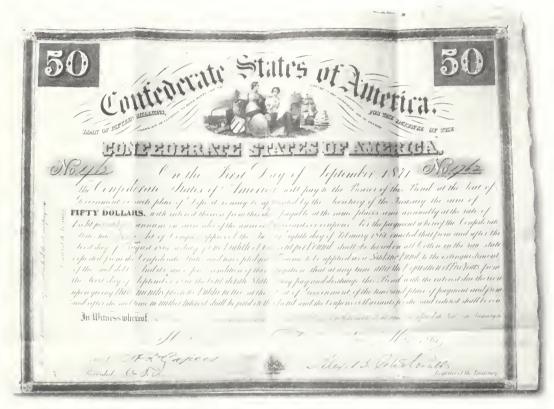
the Oncology Nursing Society in Pittsburgh, Pa. In conjunction with the test is a Pre-Congress Workshop. For more information and a application contact ONS, 1016 Greentree Road, Pittsburgh, Pa. 15220-3125.

ADVANCES IN CANCER CONTROL VI; March 16, 1988, sponsored with the Association of Community Cancers Centers, Association of American Cancer Institutes, American Society of Preventive Oncology, National Cancer Institute and ACCC 1988 Annual Meeting, to be held at: J.W. Marriott Hotel, Washington, D.C. For more information, consult the 1987 fall issue of *JCPM*.

23rd NATIONAL CONFERENCE ON BREAST CANCER, Century Plaza Hotel, Los Angeles, February 29 thru March 4, 1988. The National Conference on Breast Cancer is especially designed to meet the needs of physicians who detect, diagnose and treat women with breast cancer.

Topics include information on risk factors, early detection, screening, diagnosis and staging, initial management and management of recurrences. Material from several disciplines, appealing to all medical specialties, will be presented: family practice, surgery, obstetrics and gynecology, pathology, medical oncology, radiation oncology. A welcome reception is to be held Monday, February 29, 7:00-8:30 p.m., for all registrants. Registration fee for the five-day program is \$600 for physicians (\$550.00 for residents). Contact 1-800-Acr-Line, ext 315.

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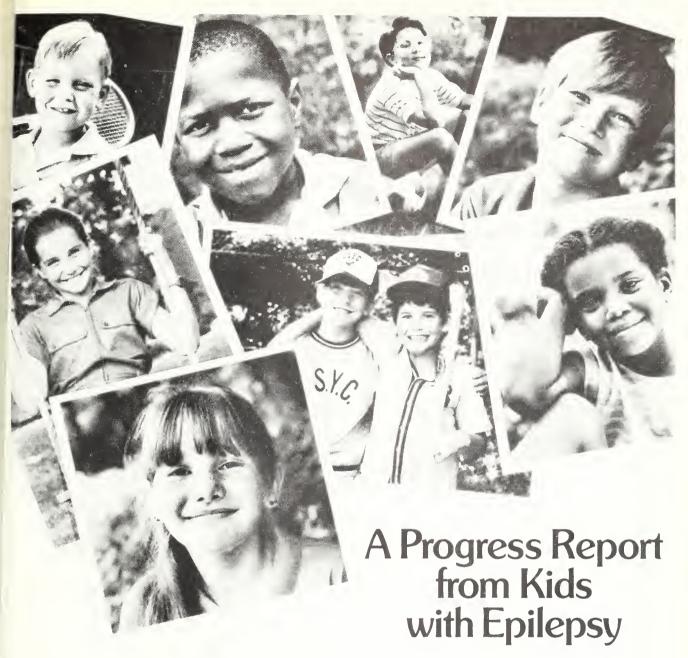
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NEWS NOTES

ISMA Board Approves IMPAC Board Appointments

ISMA's Board of Trustees has approved the following physicians and auxilians appointed to serve on the IMPAC Board:

Second District, Paul Wenzler, M.D. and Mrs. Paul (Nancy) Wenzler; Fourth District, Mark Bevers, M.D.; Eighth District, Greg Ellis, M.D. and Mrs. John (Mary Kay) Stanley; Tenth District, Albert Willardo, M.D. and Mrs. Albert (Nancy) Willardo; Twelfth District, Marvin Priddy, M.D. and Mrs. Fred (Sue) Dahling.

Kidney Stone Consensus

"Kidney Stones: Prevention and Treatment" is the subject of an NIH Consensus Development Conference to be held on March 28 to 30, 1988 at the Masur Auditorium, Bethesda, Maryland.

Fifteen Grants to be Awarded in Executive Nurse Competition

In its third year of offering financial assistance to qualified registered nurses so they may obtain graduate degrees in business, the Commonwealth Fund Executive Nurse Fellow-



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ship Program will award up to 15 fellowships in 1988.

The Commonwealth Fund will provide fellowships of up to \$25,000 each toward full-time study at an accredited graduate school of business of the Fellow's choice.

The program is co-sponsored by the American Nurses' Association and the Council of Teaching Hospitals of the Association of American Medical Colleges. It is administered for the Commonwealth Fund by the University of Rochester School of Nursing.

Inquiries and applications should be addressed to Sheila Ryan, R.N., Ph.D., Program Director, The Commonwealth Fund Executive Nurse Fellowship Program, Dean of the University of Rochester School of Nursing at the University Medical Center, University of Rochester, 601 Elmwood Ave., Rochester, N.Y. 14642, or call (716) 275-2919.

Nursing Shortage to Make Proposed Nursing Home Rules Difficult to Meet

Many nursing homes will be hard pressed to comply with proposed federal regulations that require the hiring of additional nurses, says a Ball State University nursing educator.

Kay Hodson, acting director of Ball State's school of nursing, said a nation-wide nurse shortage will make it difficult for nursing homes to hire the additional licensed and registered nurses (RNs) the rules require.

The proposal would direct nursing homes to staff facilities with licensed nurses 24 hours a day, and 3,600 practical nurses (LPNs) would have to be replaced by more highly trained (and higher paid) RNs, according to an article from the *Washington Post*.

"Skilled" nursing facilities are already staffed with RNs around the clock, but "intermediate care" homes, which constitute about half the nursing homes nationwide, are not.

"More trained RNs are needed," Hodson said. "The complexity of care in nursing homes is increasing all the time."

Registered nurses attend a college or university nursing program for two, three or four years, taking an associate's, "diploma," or baccalaureate degree, respectively. Practical nurses go through a 10-month hospital-based program.

Hodson said nursing home management would also improve as more RNs move into administrative positions and begin to use the management training they received in school.

"As our population ages, this is something we all need to be concerned about," Hodson said.—Public Information Services, Ball State University

JCAH Renamed, Starts New Survey Process

The Joint Commission on Accreditation of Hospitals has changed its name to The Joint Commission on Accreditation of Healthcare Organizations. The Commission has also released news of its new performance-oriented survey process. Seventeen hospitals across the nation, including St. Joseph Hospital in Mishawaka, will assist in evaluating the new process. The hospitals, selected from a large group of volunteers, vary by ownership, size, teaching status, location and system affiliation.

CME Quiz ...

CONTINUED FROM PAGE 1201

- 10. In the management of an Rh-negative pregnant woman alf of the following are true except:
 - a. Routine obstetrical care is adequate for the first pregnancy, but she should receive more extensive care for subsequent pregnancies.
 - Should check antibody screen at four weeks and 28 weeks.
 - c. If antibodies are present in the woman's blood, should check antibody titers every four weeks until 24 weeks gestation, then every two weeks.
 - d. If antibody titer is >1:8, amniocentesis should be considered.
 - e. If there is evidence of fetal hydrops, delivery should occur at a location where the infant can receive im mediate vigorous resuscitation if needed.

Age-based Mandatory Retirement is Illegal

"The Physician's Advisory" in its October issue outlines changes in Federal law which make illegal any provision for mandatory retirement on the basis of age. The old law only prohibited forced retirement before age 70. Late in 1986 Congress amended the Age Discrimination in Employment Act to remove the age 70 provision so an employer cannot require retirement at any specific age.

Other subjects in this issue are "Use Skill Testing in Hiring Your Staff," and "What Practice Data Should You See Each Month?"

Angola Physician Calls His Service in Afghanistan Highlight of His Career

A picture and story about Dr. John Hartman, a recently retired Angola, Ind., surgeon, appeared on a wraparound cover of the summer issue of Advance, published for Michigan

medical alumni by the University of Michigan Medical Center.

Dr. Hartman is a 1946 graduate of the University of Michigan Medical School. The article was pegged on his service as a volunteer surgeon in Afghanistan for two months early this year.

In the process of caring for wounded and sick Afghans, both civilian and military, Dr. Hartman said he worked 18-hour days, too often with little or no medical supplies available.

Dr. Hartman is not a newcomer to catch-as-catch-can war. He served in Korea as a surgeon in a Mobile Army Surgical Hospital. And in 1966 he served in Vietnam.

What's next? He calls his service in Afghanistan the highlight of his career. "I'd like to go back. I'd like to be able to take up where I left off."

Study Shows Crisis Ahead for Teaching Hospitals

A study commissioned by the Department of Health and Human Ser-

vices and conducted by Arthur Young indicates the nation's 1,300 teaching hospitals are heading for a financial crisis.

The study examined the costs of training interns and residents in teaching hospitals. Changes in government funding policies and price competition among healthcare providers were cited as contributing to the financial crunch teaching hospitals face.

Changes now proposed that will have an adverse financial impact on hospitals include:

- An end to federal reimbursement to hospitals for unpaid Medicare debts. This would hurt teaching hospitals badly since they care for more of the nation's indigent than any other providers;
- A reduction in federal Medicare reimbursement for the indirect costs of medical education in teaching hospitals, and
- Pending legislation in New York and California that would limit the length of shifts for interns and residents, thereby eliminating an inexpensive source of skilled labor for teaching hospitals.

Physician Recognition Awards —



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



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Cottrell, Robert F., Fort Wayne

Gibbs, Philip S., Indianapolis Goldschmidt, Max W., Munster Herring, Malcolm B., Indianapolis House, Jerry L., Indianapolis Johnson, C. William, Indianapolis Jones, Thomas A., Indianapolis Kelly, Michael J., Vincennes Kight, Jerry L., Indianapolis King, Charles R., Anderson Kissel, Wesley A., Bloomington Kohr, Roland M., Terre Haute Kulam, Abdulkader M., Munster Lauer, Dean H., Valparaiso Manders, Karl L., Indianapolis Maya, Gaston N., Jeffersonville

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news notes

Here and There . . .

Dr. William A. Kirsch of Noblesville has been named a diplomate of the American Board of Family Practice.

Dr. Jan Green of South Bend discussed "Impotence—Treatment Can Change Your Life" during an October public meeting at Memorial Hospital.

Dr. Kenneth Brandt and Judy Feinberg discussed "What is Arthritis and How Can It be Treated?" and "Therapy for People with Arthritis" at an October workshop at the Fairbanks Park YWCA in Terre Haute. Dr. Brandt is a professor of medicine and head of the Rheumatology Division at I.U. School of Medicine and director of the I.U. Multi-Purpose Arthritis Center; and Ms. Feinberg is the assistant director of the Occupational Therapy Department, I.U. Medical Center.

Dr. Wayne Crockett of Terre Haute addressed "Treatment of AIDS: The Patient's Right to Confidentiality" as part of a panel discussion at a recent meeting of the Wabash Valley Press Club.

Dr. Thomas Browne of Evansville gave an update on pulmonary disease at an October meeting of the Deaconess Hospital Tri State Better Breathers support group.

Dr. Philip R. Myers, director of Emergency Medical Services at

might as well try yours."

Memorial Hospital in Mishawaka, has received the Emergency Medical Services award from the Saint Joseph's Medical Center in conjunction with Emergency Medical Services Week, Sept. 18-24.

Dr. Robert Strawbridge of Noblesville and Dr. Michael Harper of Tipton spoke at an October "Breathing Impaired Outing" at the Tipton County Memorial Hospital.

Dr. David B. Beeson of Indianapolis has been named a diplomate by the American Board of Family Practice.

Dr. Richard H. Stein of Vincennes was elected first vice president of the American Society of Anesthesiologists. He will be named the association's president at its annual meeting in October 1989.

Dr. Kim A. Volz of Jasper attended the annual Scientific Assembly of the American Academy of Family Practice in San Francisco Sept. 14-17.

Dr. John Haste of Argos is president of the Marshall County Chapter of the American Diabetes Association and was the featured speaker at the group's October meeting in South Bend.

Dr. David Johnson of Evansville participated in a rehabilitation medicine community health forum in October; he is the medical director of the rehabilitation unit at Deaconess Hospital.

Dr. Margaret Wade of Indianapolis was the guest speaker at a program for the Vigo County Medical Auxiliary and presented a program on AIDS.

Dr. Nancy Keller Madden and Dr. Patrick J. Keenan presented "Physical Consequences of Stress" as the second of the South Bend Clinic's fall lecture series.

Dr. Steven R. Smith of Indianapolis, director of Occupational Health at Community Hospitals Indianapolis, has been inducted as a fellow of the American Occupational Medical Association.

Dr. Gary T. Raflo of Indianapolis has been named a fellow of the American Academy of Facial Plastic and Reconstructive Surgery.

Dr. Randolph W. Lievertz of Indianapolis has been elected to the

Board of Directors of the American Cancer Society, Marion County Chapter. Dr. Lievertz recently presented two Grand Rounds, "Estrogen Replacement Therapy" at Winona Memorial Hospital in Indianapolis and "Treatment of Pneumonia with Complicating Conditions" at St. Joseph Hospital in Kokomo.

Dr. Hanus J. Grosz of Indianapolis recently presented a paper, "Personality Profiles of PMS Patients with and without Tubal Ligation" at the Second International Symposium on Premenstrual, Postpartum and Menopausal Mood Disorders, held in South Carolina.

Dr. Fouad A. Ilalaby of Fort Wayne has been named a fellow of the American College of Radiology.

New ISMA Members

Karam F. Abbasi, M.D., Kokomo, general surgery.

Bernadette E. Aghaji, M.D., Gary, internal medicine.

Gabriel C. Aldulescu, M.D., East Chicago, anesthesiology.

Mark J. Ambre, M.D., Noblesville, pediatrics.

Kimberly D. Arthur, M.D., East Chicago, obstetrics and gynecology.

Linda S. Backer, M.D., LaPorte, anesthesiology.

David C. Benson, M.D., Jeffersonville, urological surgery.

Bernard A. Bergman, M.D., Michigan City, psychiatry.

Magdy M. Bishay, M.D., Valparaiso, anesthesiology.

Jeffery E. Boone, D.O., Cicero, family practice.

Corazon V. Carpio, M.D., Crown Point, anesthesiology.

Point, anesthesiology.

Jeffrey L. Christie, M.D., Beech

Grove, cardiovascular diseases.

Joel A. Cohan, M.D., Munster,

internal medicine. Shawn M. De Later, M.D., Chicago,

Stephen M. Dillinger, M.D., Greenfield, general surgery.

emergency medicine.

Jerry E. Douglas, M.D., Indianapolis, family practice.

Carol D. Farr, M.D., Indianapolis, anesthesiology.

David L. Farr, M.D., Indianapolis, anesthesiology.

Stephen Fassino, M.D., North Vernon, family practice.

Mark A. Feldner, M.D., Munster, family practice.

Franklin J. Firestone, M.D., Michigan City, family practice.

Katheleen H. Flohr, M.D., Beech Grove, cardiovascular diseases.

D. Diane Foley, M.D., Indianapolis, pediatrics.

David E. Fumo, M.D., Michigan City, gastroenterology.

John H. Gleaton, M.D., Chicago, internal medicine.

Mateo V. Guanzon, M.D., Dyer, general surgery.

Anthony L. Hall, M.D., Evansville, family practice.

Louis Hallal, M.D., Veedersburg, general surgery.

David J. Hamilton, M.D., Beech Grove, cardiovascular diseases.

Alan B. Hartman, M.D., Richmond, internal medicine.

Mark Holbreich, M.D., Indianapolis,

allergy.
Mark R. Hurt, M.D., Elkhart,

diagnostic radiology. Byung I. Hyun, M.D., Orland Park,

Ill., radiology.

Peter J. Iagmin, M.D., Whiting,

family practice.

Seth I. Kaplan, M.D., Chicago,

emergency medicine.
Michael A. Keer, D.O., Munster,

general practice. Sirajuddin S. Khaja, M.D., Ham-

mond, internal medicine.
William A. Kirsch, M.D., Noblesville, family practice.

Mark A. Klaassen, M.D., Elkhart, orthopedic surgery.

Vidya S. Kora, M.D., Michigan City, internal medicine.

Robert F. Lebow, M.D., Indianapolis,

internal medicine.

Michael A. Linton, M.D., Gary,

obstetrics and gynecology.

Rose A. Madarang, M.D., Munster, internal medicine.

Robert W. Marquis, M.D., Merrillville, psychiatry.

Thomas W. Moffo, M.D., Indianapolis, internal medicine.

Francisco Negreros-Castillo, Kewanna, general practice.

Thach N. Nguyen, M.D., Merrillville, internal medicine.

Diana M. Okon, M.D., Jeffersonville, obstetrics and gynecology.

W. Wayne Peng, M.D., Munster, urological surgery.

Frank R. Quint Jr., M.D., Hebron, family practice.

Kenneth I. Resnick, M.D., Munster, ophthalmology.

Douglas W. Robertson, M.D., Indianapolis, orthopedic surgery.

Ronald J. Rosencranz, D.O., Homewood, Ill., obstetrics and gynecology.

Harish A. Shah, M.D., Merrillville, internal medicine.

Suzanne E. Smith, M.D., Chicago, emergency medicine.

Sally Sperring, M.D., Martinsville, emergency medicine.

Linda L. Stropes, M.D., Indianapolis, internal medicine.

Edward P. Todderud, M.D., Indianapolis, orthopedic surgery.

Jeffrey A. Tritsch, M.D., Merrillville, ophthalmology.

Josephine L. F. Wang, M.D., Merrillville, pediatrics.

Patricia S. Wesley, M.D., Indianapolis, internal medicine.

William E. Whitson, M.D., Indianapolis, ophthalmology.

Gisela J. Yingst, M.D., Michigan City, pediatrics.

Residents:

Mary J. Landy, M.D., Indianapolis, psychiatry.

Paul K. Metzger, M.D., Indianapolis, hand surgery.

J. Douglas Smith, M.D., Indianapolis, family practice.

Martin F. Wieschhaus, M.D., South Bend, family practice.

For the Asking ...

• "Baby Foods," is a new pamphlet released by the American Council on Science and Health. The report examines both commercial and home-made baby foods, and provides suggestions on making baby foods at home. Carefully and accurately prepared homemade foods, the report indicates, are as safe and reliable as commercial baby foods. To obtain a copy, send a self-addressed, stamped (66 cents postage), business-sized envelope to Baby Food Report, ACSH, 47 Maple St., Summit, N.J. 07901.

- "Answers About AIDS" is the title of a booklet released by the American Council on Science and Health. Copies are \$2 each. The price is reduced for 10 or more copies. Also available from the Council are order blanks for previously released reports and, for those who wish to join the Council, a schedule of membership fees. Write the American Council of Science and Health at 47 Maple St., Summit, N.J. 07901.
- "Diet and Behavior" is a 44-page booklet published by the American Council on Science and Health. "Many widely held beliefs about diet and behavior have been shown to be false," according to the report. "Except for the behavioral effects of severe malnutrition, which are well known, no conclusions about diet and behavior have been established with sufficient reliability to justify applications to real-life situations or formulations of public policy." For a copy of the report, send a SASE (#10, 66¢) to Diet and Behavior Report, ACSH, 47 Maple St., Summitt, N.J. 07901.
- "AIDS Line Update" is a bimonthly newsletter written for health care workers, educators and the general public. The Applied Science Press of Los Angeles converts scientific information into text that is compatible with the reading skills of the public. Medical researchers who have more than 35 years' experience in the academic and public environments do the writing. AIDS Line UpdateTM is available by subscription for \$21.50 annually. Write P.O. Box 4661, North Hollywood, Calif. 91607.



Be A Better Writer

By Arthur R. Pell, Ph.D. Consultant, Dale Carnegie & Associates, Inc.

"When I talk to somebody in person or on the telephone. I have no trouble making myself understood, but when I have to write a letter or memo. I sound stilted and inadequate." This comment was not made by a high school dropout, but a graduate engineer with a master's degree in business administration. Many people who are articulate in oral communication freeze up when conveying their ideas on paper.

Part of the reason that this occurs is the mistaken notion that written words must sound more formal than the spoken message. This results in letters and memos that sound stiff and urthright.

Our written words differ from our spoken words because the meaning conveyed by oral communication is tempered by our voice tone and our body language. In addition, if our meaning is not clear, this becomes known to us immediately by the manner in which our message is received and the questions asked by the other party. In order that our written message comes across to the reader with the same impact as our spoken words, the language of our letters and memos must be somewhat different from the language used in speaking. Yet it need not be too different. The following suggestions will help us write in much the same way as we speak without sounding stifted.

Plan your letter before you write one word.

Think before you write. Over the many years she has held executive positions. Deborah Kane has received many compliments about her letters. She rightfully prides herself on this

A study of Ms. Kane's outlines indicate that she does not only list points to be covered, but puts them *in order of importance so the letter will start immediately with what is of most interest to the correspondent.* Rather than lead up to the critical information with background material, she states it immediately and follows up with whatever additional matters are absolutely necessary to make the point.

Instead of the common beginning "We are in receipt of your letter requesting information about our Model #1754, and so on," she wrote "Yes, our Model #1754 will solve your problem," and then provided evidence Instead of ending "Thank your for your inquiry," she concluded with "We look forward to receiving your order." Statements such as these indicate a direct and dynamic response to the inquiry and precipitate immediate positive action.

Keep the three C's in mind: Complete, Concise, Clear.

How can a letter be kept concise and still be complete and clear? Many writers include much extraneous material in a letter or memo. When I nitique Valasquez returned from a business trip to I atm. America, his report was ten pages long. He certainly was complete, but much of what he wrote was incidental information which had no bearing on his mission. He reported everything he saw and heard rather than concentrating on the objectives of his trip.

Ask yourself these questions before you write a long letter or report "What are the key matters to be discussed?" "How can I present these matters in the most concise form and provide all the information as clearly as possible?" After writing the first draft, reread each sentence and ask "Is this sentence really needed?"

Avoid jargon.

Gary was puzzled by the letter he was reading. The writer kept referring to the advantages of establishing an EAP and Gary had no idea what those letters meant. The writer incorrectly assumed that Gary knew they meant "Employee Assistance Program," and by making this false assumption, failed to convey the message. Initials, acronyms and other jargon have a place when communicating with people in the fields where that jargon is used. One cannot assume that others will know these terms.

However, if you write a letter using the jargon of the field in which the recipient of the letter works, using such terms may create an acceptance by your reader

Use short, punchy sentences.

You may be impressed by your own excellent rhetoric, but the reader of your letter will find it much more understandable if you avoid complex, multiphrase sentences. The simple declarative sentence is often the best. Instead of saying "In light of the research in this field, it is our opinion that the program we are offering will facilitate the writing skills of the employees who undertake this training," say: "This program will teach your people to write better."

However, avoid structuring all your sentences in the same manner. This will make your letter boring. Short and punchy—yes, simple and dull—no. Make your main points in capsule form like the headline of a newspaper story, supplement them with details where appropriate by using more varied word structure.

Ending the letter.

Before writing the final paragraph of a letter or memo, review what it is you wish to accomplish. If the letter is a response to a request for information, did you provide the information requested? If the letter is intended to obtain action from the recipient, have you specified what action you want?

Keep in mind that the final paragraph is your last chance to make your point just as a good salesperson always ends a sales call or sales letter by asking for the order, any good letter writer should ask at the end of the letter that the recipient take the action that the letter has addressed. A thank you is always appropriate, but by itself it is not enough. Instead of saying: "Thank you for your consideration," it is far better to end the letter with. "Thank you for returning the enclosed maintenance agreement, which will assure you of worry-free use of your equipment for the next twelve months."

You can be a better letter writer by planning your letters and following these simple suggestions to make each letter tell your message in an easy-to-read, yet forceful style.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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IU Medical Center Gets Grant for AIDS Study

The National Institute of Allergy and Infectious Diseases has awarded the Indiana University School of Medicine a five-year grant of \$6.1 million to develop an AIDS Clinical Studies Group. Dr. Robert B. Jones said the new research group will evaluate new and experimental drugs in the treatment of patients infected with the human immuno-deficiency virus.

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Dr. Jones is an I.U. professor of medicine and directs the Center for the Study of Sexually Transmitted Diseases.

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10-ml viols (0.25 mg/ml)

Before prescribing, please consult complete product information, o summary of which follows:

WARNING: Burnex (burnetanide/Roche) is a potent diuretic which, if given in excessive amounts, con lead to a profound diuresis with water and electralyte depletion. Therefore coreful medicol supervision is required, and dose and dosage schedule have to be adjusted to the individual patient's needs. (See under DOSAGE AND ADMINISTRATION in complete product

INDICATIONS AND USAGE: Edemo associated with congestive heart toilure, hepatic and renal disease, including the nephrotic syndrome.

Almost equal diuretic response occurs after oral and parenterol administration of Burnex. If impaired

gastroinlestinal absorption is suspected or orol administration is not practical, Burnex should be given by the inframuscular or infravenous route. Successful freatment with Burnex following instances of allergic reactions to turosemide suggests a

lack of cross-sensitivity.

CONTRAINDICATIONS: Anurio. Hypersensitivity and in potients in hepotic come or in states of severe electrolyte depletion. Although Burnex can be used to induce duriesis in renal insufficiency, any morked increase in blood ureo nitrogen or creatinine, or the development of oliguria during therapy of patients with progressive renal disease, is an indication for discontinuation of freotment.

WARNINGS: Dose should be adjusted to patient's needs. Excessive doses or too frequent administration can lead to protound water loss, electrolyte depletion, dehydration, reduction in blood volume and circulatory collapse with the possibility of vosculor thrombosis and embotism, particularly in elderty potients.

polients
Prevention of hypokalemia requires porticular affention in patients receiving digitalis and diuretics for

congestive heart failure, hepatic cirrhosis and ascites, states of aldosterone excess with normal renal fundion, potossum-losing nephripopathy certain diarrheal states, or other states where hypokalemia is thought to represent particular added risk to the patients.

thought to represent particular added risk to the patients in patients with hepatic irrhosis and assetties sudden afterations of electrolyte bolonce may precipitate hepatic encepholopathy and como. Treatment in such patients is best initiated in the hospital with small doses and coreful monitoring of the patient's clinical status and electrolyte balance. Supplemental polosisium and/or spirionoloctone may prevent hypokolemia and metabolic alkalosis in these potients in cats, dogs and guinea pigs, Burnex has been shown to produce obtaixity. Since Burnex is about 40 to 60 times as potient as turnosemide, it is anticipated that blood levels necessary to produce obtaixity will rarely be achieved. The potential for obloaxicity increases with introvenous therapy, especially at high doses. high doses

riign tooses

Potients altergic to sulfonomides moy show hypersensitivity to Burnex

PRECAUTIONS: Meosure serum potassium periodicolly and odd potassium supplements or potassium-sporing diuretics, if necessary Periodic determinations of other electrolytes are odvised in patients
treated with high doses or for prolonged periods, particularly in those on low soft diets

Hyperuricemia may occur. Reversible elevations of the BUN and creatinine may occur, especially with dehydration and in potients with renal insufficiency. Burnex may increase urinary calcium excretion. Possibility of effect on glucose metabolism exists. Periodic determinations of blood sugar should be done, porticularly in patients with diabetes or suspected latent diabetes.

Potients should be observed regularly for possible occurrence of blood dyscrasias, liver damage or idiosyncratic reactions. Especially in presence of impoired renot function, use of parenterally administered Burnex should be avoided in patients to whom ominoglycoside antibiotics are also being given, except in life-threatening.

Ortugs with nephrotoxic potential and burnetanide should not be administered simultaneously. Since lithium reduces renot clearance and adds a high risk of lithium toxicity, it should not be given with

durefics
Probeneous should not be administered concurrently with Burnex
Concurrent theropy with indomethacin not recommended
Burnex may potentiate the effects of antihypertensive drugs, necessitating reduction in dosage
Interaction studies in humans have shown no effect on digaxin blood levels
Interaction studies in humans have shown Burnex to have no effect on warfarin metabolism or on

plasma prothrombin activity

Pregnancy Bumex should be given to a pregnant waman only if the potential benefit justifies the potential risk to the fetus

Pregnoncy Burnex should be given to a pregnont woman only if the potential task to the fetus. Burnetanide may be excreted in breast milk. Pediatric Use. Safety and effectiveness below age. 18 not established. ADVERSE REACTIONS. Muscle cramps, dizziness, hypotension, headache and nauseo, and encephalopothy (in potents with preexisting liver disease). Less trequent clinical adverse reactions are weakness, impaired hearing, rash, pruritus, hives, electrocardiagram changes, obdominal poin, arthritic pain, musculoskeletal pain and vorniting. Other clinical adverse reactions are vertigo, chest pain, ear discomfort! taftigue, dehydration, sweating, hyperventilation, dry mouth, upsel stomach, renol taliure, asterixis, itching nipple tenderness, diorrhea, premoture ejaculation and difficulty maintaining an erection. Loboratory abnormalities reported are hyperuricemia, and variations in CO₂ content, bicarbonate, phosphorus and calcium. Although manifestations of the pharmacologic action of Burnex, these conditions may become mare pronounced by intensive therapy. Diuresis induced by Burnex may olso rorely be accomponed by changes in LDH, total serum bilirubin, serum proteins. SGOT, SGP, lokaline phasphotose, cholesterol, creatinine clearance, deviations in hemoglobin, prothrombin time, hemolocrit, pialetel counts and differential counts. Increases in urinary glucose and urinary protein have also been seen.

DOSAGE AND ADMINISTRATION

DOSAGE AND ADMINISTRATION
Oral Administration The usual total daily dosage is 0.5 to 2.0 mg and in most potients is given as a

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